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Regional Approaches to Mortuary Analysis

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Springer Science+Business Media, LLC

Library of Congress Cataloging-in-Publication Data

On file

ISBN 978-1-4899-1312-8 ISBN 978-1-4899-1310-4 (eBook)
DOI 10.1007/978-1-4899-1310-4

Originally published by Plenum Press, New York in 1995
Softcover reprint of the hardcover 1st edition 1995

10 9 8 7 6 5 4 3 2 1

Foreword

Trial and Error in the Study of Mortuary Practices—Exploring the Regional Dimension

David Clarke ended *Analytical Archaeology* with a quotation from the philosopher Francis Bacon: "Truth comes out of error more readily than out of confusion" (Clarke 1978:487). There is no better way of learning new methods than by contemplating old mistakes, and the mistakes that we find most revealing are those that we have made ourselves. So this foreword is partly autobiographical. I can best illustrate the potential of a new approach to mortuary practices by describing the process of trial and error as it has affected my own research.

The meeting that gave rise to this book was the successor to a conference held in London over 10 years ago and published as *The Archaeology of Death* (Chapman, Kinnes, and Randsborg 1981), and it has a number of the same contributors. Among them is Jim Brown who had edited an equally influential study of this subject some years before (Brown 1971). As we shall see, his 1981 paper forms a vital link with the contents of the present volume.

In *The Archaeology of Death*, I considered some of the changes of mortuary ritual in the British Bronze Age and argued that these had a wider significance (Bradley 1981). Earlier Bronze Age mortuary rites involved the creation of large mounds, the deposition of individual bodies, and the provision of complex grave goods. Such burials often took place at prominent natural locations. In the later phase this changed. Mounds were uncommon, and those that were built were slighter than their predecessors. Burial was by cremation, and the remains were placed in ordinary domestic pots. There was virtually no evidence of complex grave goods, and cemeteries were located alongside settlements and their fields. There was less emphasis on the individual, and the deposits could be found in clusters of perhaps 10 to 20 burials.

At the time, I followed conventional wisdom in postulating a direct link

between the amount of differentiation in each series of burials and the structure of Bronze Age society. The changes that took place between the Earlier and Later Bronze Ages seemed to reflect a period of social collapse. From a society in which gradations of wealth and status were emphasized in lasting form, there was a change to one with less evidence on internal ranking. This, I suggested, might reflect wider changes in the landscape, where a network of monuments to the dead gave way to a system of rather uniform settlements, houses, and fields.

But Jim Brown's paper, on the search for rank in prehistoric burials, introduced two issues that came to dominate my work over the next 10 years (see Brown 1981). I must say why my original analysis now seems incomplete, and, in particular, why a more subtle approach involves a regional dimension to the study.

Brown's points were straightforward, and, in retrospect, quite devastating. First, there was the question of formation processes. How far might our observations pick out different stages in the treatment of a single body? We needed to consider mortuary rites as a process, not an event, and to trace the separate stages in the rites of passage if we were to avoid the trap of supposing that each deceased individual entered the archaeological record only once. At the same time, we needed to broaden the scope of analysis in another way. The individual cemetery should not represent the entire framework of our studies, as people of different status might be buried in different places and in different ways. A regional perspective was essential.

It would be dishonest to claim that these ideas led to my immediate conversion. There was an intermediate stage in which I came to realize that my arguments for social devolution failed to match the growing complexity of other parts of the archaeological record. The rarity of bronze objects in cemeteries did not imply a general absence of fine metalwork. In fact, weapons and ornaments were made in large quantities, whilst the burials themselves became less frequent with time. Such weapons were rarely found on occupation sites and were usually discovered in rivers (Bradley 1990:Chapter 3). There was a second problem too. From 1980 onwards new kinds of settlements were discovered, in particular a series of fortified enclosures. These new discoveries had nothing in common with the settlements found alongside the cremation cemeteries (Needham 1992). The material associated with these sites is much more varied, and, most significant of all, mold fragments show that these were among the places where weapons and ornaments were made. Such evidence suggests a higher tier in the social hierarchy than we had envisaged before. At first sight we could recognize differentiation in the settlement pattern, but not in the mortuary sphere.

That is where Brown's arguments set me thinking. Had we been studying only one aspect of the mortuary ritual and assuming that it represented the whole? We had analyzed the cremation cemeteries, but were there other phenomena associated with the treatment of the dead? And did these necessarily take place close to the settlement at all?

The contrast that I discussed in *The Archaeology of Death* was based on the observation that weapons and ornaments were no longer discovered with the dead. Let us consider the history of these finds. It is easy enough to suggest that their disappearance from the mortuary record signals a wider social collapse, but the rate at which they entered the archaeological record may actually have increased (Bradley 1990:140–141). In fact, objects that would normally have been buried with the dead changed their contexts from graves to other kinds of deposit, including watery locations.

The first stage in rethinking the mortuary archaeology of the Bronze Age is to ask whether some of these supposedly isolated finds actually formed part of the funerary record. I am not the first person to ask whether the weapon deposits represent the residue of a mortuary ritual—a kind of high-status "river burial" (see Torbrügge 1971). The argument is rather tenuous, but it does have test implications. Could human remains be discovered in the same rivers as metalwork? Would they share the distinctive chronology and distribution of the weapon finds? And, given the predominance of such weaponry, might we expect to find a predominance of males?

In collaboration with Ken Gordon, I studied finds from the Thames, the most prolific source of Bronze Age metalwork. Our results took us by surprise. Hidden in London's museums, unstudied for nearly a century, were large collections of human skulls from the river (Bradley and Gordon 1988). Enough had been recorded to show that they were found in the same campaigns of dredging as the weaponry and even had the same distribution. A review of the collection showed that other parts of the body were absent although ordinary animal bones were frequently recovered. Up to 600 human skulls are recorded from the Thames, of which nearly 300 survive today. These fall into a restricted age group (there are virtually no young people) and about 60% of the identifiable skulls are male. It remained to expose this material to a closer scrutiny by radiocarbon dating. Two thirds of our sample belong to the Later Bronze Age, precisely the period in which the river is full of weapons whilst inhumations are absent on dry land.

This only raised another series of questions—questions that had been anticipated in Jim Brown's paper. There were no mandibles with these finds, so they must have entered the river as skulls rather than heads, yet none of them showed any signs of injury. This suggested that certain of the dead had received preliminary treatment elsewhere, and this required a further look into the archaeological record. It did not take long to discover that among the finds from the high-status settlements were small amounts of disarticulated human bone (Needham 1992). Until recently these had been dismissed as "settlement refuse" and considered to show a casual attitude to the dead. Now we can ask whether the bodies of selected individuals had received preliminary treatment in the domestic sphere.

Not all those bones were of males. Having traced a link between weapon finds

and human skulls, we can also consider the treatment of bronze ornaments, which are interpreted as female equipment because the same types are found with women's skeletons on the Continent. But where weapons changed their associations from burials to water deposits, bronze ornaments are usually found on dry land. Often they were deposited in sets suggesting the equipment of one individual. Again, the archaeological literature is revealing once it is approached with the right questions in mind. Ornament sets did not occur with inhumation burials in Britain, but they have been found with small groups of unburnt bones (Bradley 1990:113). There are no recent discoveries to allow us to analyze this material, but once again it seems possible that fine metalwork was deposited with unfleshed human remains.

So by broadening our geographic focus we can bring a series of phenomena into play that are usually considered in isolation. It is only when we do this that we become aware of the links between them. Without a regional focus there is nothing to connect them with mortuary ritual. But having made those connections new possibilities arise. There are suggestions of high-status funeral rites to set alongside the undifferentiated cremation cemeteries of my earlier study. In addition to cremation burials, we now have evidence for a more complex treatment of the dead, in which some of their bones were taken away from the settlements and deposited in special locations together with elaborate metalwork.

But the business of reinterpretation is a continuing process, and it is not at an end. There are limits to what we can infer from museum collections or early publications. Once we know what questions to ask, new discoveries can be revealing. No sooner had we dated the skulls from the Thames than excavation of a waterlogged site in eastern England revealed a timber "wall" of Later Bronze Age date leading into open water. With it were numerous metal finds, many of them showing signs of deliberate damage. There was also a series of isolated human bones (Pryor 1992). What we had inferred through museum work, we could demonstrate by excavation.

In each case the moral is the same. By studying settlements as well as mortuary deposits we can trace an unexpected level of complexity in the treatment of the dead. And by linking deposits of different kinds—deposits that are often studied by different specialists—we can start to recognize the full complexity of ancient mortuary practices and correct earlier misunderstandings of the character of Bronze Age society. The interpretation that is unfolding suggests much greater differentiation than I saw 10 years ago, and is also more consistent with the settlement evidence. My biggest mistake was to work on too small a scale. By adopting a regional level of analysis I have corrected at least some of my errors, and I expose them now so that other people can avoid the same mistakes.

I believe that the changes of perspective that I have described here encapsulate some of the more promising approaches to the archaeology of death during recent years. This book exemplifies many of those approaches and it provides a

wealth of detail that British archaeologists are often denied. That is why it is so welcome.

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Preface

This book is the outgrowth of a symposium held by the Society for American Archaeology in 1991. At the onset of the third decade of mortuary analysis, this group of papers offers a redirection of burial research through expansion from the site-specific to the regional level. This is not merely a broadening of the scale of research. Regional mortuary approaches allow the introduction of new questions about peer polity interactions and regional alliances that can be addressed by this methodology in ways that complement and extend traditional settlement system and exchange analyses.

Mortuary analysis is often perceived as focusing exclusively on patterns of burial treatment of individuals from a single site or cemetery. The emphasis is commonly placed on the structure of the individual grave or the objects found buried with the deceased. In all too many cases this has led to highly statistical analyses of burial clusters that are never connected back to the larger archaeological data set for the site or the region. In expanding mortuary analysis to a regional scale, this myopic focus on the site is corrected as the scope of view is broadened.

In the more traditional field of subsistence-settlement analysis, the initial product of research is often a description of site structure and activity areas. On the regional scale, the focus expands to examine the patterned distribution of different site types against the landscape of natural and cultural resources. The questions thus change from those relating to activity areas within a house or a village to those concerning seasonal access to resources, patterns of population mobility, avenues of material exchange, and mechanisms for control of people, possessions, and resources.

For mortuary analysis a similar expansion of questions emerges with the shift from the site to the region as the level of inquiry. When the mortuary site is viewed not as the total frame of reference but as a single point within the cultural landscape the questions change from those relating to the symbolic significance imbued in a given material category to the communal information communicated by the site itself as a totality.

Part I provides a historical review of the archaeology of death from its foundation in social theory through its modern criticisms. Brown focuses on the growth of this field and emphasizes the errors that have arisen from misunderstandings of the theoretical model proposed by Saxe and Binford.

Part II includes four case studies focusing on mortuary sites as components of the archaeological landscape. Chapman extends his analysis of 10 years ago, demonstrating how this growth in mortuary models has affected his research. Trinkaus focuses more on the interplay between labor organization and social rank. Charles uses the narrative approach to trace regional changes across temporal boundaries. Goldstein presents the mortuary site as a vibrant component of the cultural landscape.

Part III focuses on mortuary analysis and identities. O'Shea examines spatial and temporal trends in burial practices in the Bronze Age in Hungary. Fisher examines boundaries between communities within and across kingdoms with emphasis on the gender differences in such boundaries. Beck utilizes role theory to bridge from mortuary ritual to ethnic boundaries.

Part IV emphasizes the major contributions biological anthropology brings to mortuary analysis. Konigsberg and Buikstra trace cooperation as revealed through genetic continuity, while Milner focuses on biological evidence of conflict and warfare.

Part V consists of Larsen's commentary and criticism of these efforts at expanding the models for mortuary analysis to a regional scale.

Acknowledgments

There are many people who have supported and encouraged me throughout this effort. The contributors, in addition to providing the chapters, continued to bolster my spirits when I felt overwhelmed by the task of pulling it all together. Bob Chapman in particular seemed to know when I needed a dose of laughter to keep going. Rosemary Joyce provided valued constructive criticism and structural suggestions that were incorporated into the volume. Eliot Werner combined patience with prodding to help me through the hurdles and pitfalls of putting an edited volume together. (Thanks Eliot!)

Perhaps most of all I wish to thank Art Saxe and Lew Binford. The models they first proposed in the early 1970s are the foundation on which this work is built.

Lane Anderson Beck

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Part I

Introduction

Chapter 1

On Mortuary Analysis—with Special Reference to the Saxe–Binford Research Program

JAMES BROWN

INTRODUCTION

In the debate that has developed over the theoretical program of mortuary analysis presented by Saxe (1970) and Binford (1971) over 20 years ago, great stress has been laid on limitations to their goal of identifying social factors underlying differences in the material treatment of the dead. Critics often raise objection to the search for features of social organization in the archaeological manifestations of ritually dominated practices (Hodder 1982; Pearson 1982; Shanks and Tilley 1982). Ritual is portrayed as obeying different rules, and hence demanding separate lines of argument. Lost sight of is the long-acknowledged effect that the scale of social complexity has on the range and complexity of ritual (Durkheim 1915). The problem is not with the principle, but with the means for secure and credible articulation of material manifestations of ritual to features of social organization.

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Of course, the principle is one thing and the concrete explication is quite another. Even when sociological connections to mortuary practices are observed by social and cultural anthropologists, focus has settled on either theoretical schemata or heavily qualified generalizations (Bloch and Parry 1982; Metcalf and Huntington 1991). Exceptions and counterexamples of common regularities seem to prevent credible generalization, or elicit objections over undue imposition of theoretical bias. Thus, Metcalf and Huntington (1991) dispute the direction of Bloch and Parry's (1982) analysis of the use of funerary ritual "as a device for the creation of ideology and political domination" as a rigid application of a Durkheimian perspective toward the social forces underlying collective action. Although the situational uncertainties inherent in enlisting customary practice as a means for ressserting traditional social order are passed over in Bloch and Parry's perspective, it is evident that if steps are to be taken in identifying relationships between the uses of ritual and social organization, it is necessary to attend to the relative robustness of relationships and to acknowledge the existence of contingent relationships.

After all that has been said respecting the social features operating in mortuary practices, the expansion of ethnological research into this rather undeveloped area offers tangible promise for extracting propositions that can be used by archaeologists with some confidence.

COLLECTIVE REPRESENTATION AND MORTUARY PRACTICES

The cultural universality of mortuary practices opens up a range of expression that is comparable to other rites of passage. Reviews on the subject from cultural anthropological and historical perspectives make it abundantly clear that the variety of practice is so diverse as to defeat easy categorization and facile generalization (Block and Parry 1982). Even in the rather apparent manner in which mortuary practices commonly take on expressions that support the existing social order, Metcalf and Huntington (1991:6) cite the cautionary case in which that order was actually subverted by death rites. But on certain matters there seems to be some assent—assent that mortuary practices take on a political role to some degree. For this reason, not surprisingly, mortuary practices (considered in this chapter as equivalent to funeral rites) are strongly associated with economic transactions (Damon and Wagner 1989; Kan 1989; Metcalf and Huntington 1991; Precourt 1984; Weiner 1976). Thus, one archaeologist has stated that "mortuary rituals are amongst the routine, strategic engagements through which people reproduce the conditions of their own lives. Mortuary symbolism is thus employed by mourners concerned not simply with the proper treatment of the dead, but also with the reallocation of rights and duties amongst themselves" (Barrett 1990:182).

By placing the locus of mortuary enactments in the hands of the living as a

strategy that the survivors of the deceased must take to solve any number of social problems, a broadened basis for social explanation of material remains is thereby created. The reason for this enhancement will become clear below.

In past archaeological treatments of mortuary analysis, the focus has been upon individual treatments. This direction has been boosted by the ease with which analysis is made accessible. But I also suspect that it has been supported by the domination of individual treatments in contemporary life. However, alternative treatment and its social basis has been brought to the attention of anthropologists by the work on the Merina of Madagascar (Bloch 1971, 1981). Collective burial of many individuals entailed a suppression of individual identities for strongly social reasons. Although it is rarely practiced today, collective burial once was far more common. Many of the major rock and earthen tombs known archaeologically were erected with chambers for multiple interments rather than for single individuals. The implications that collective burial have on archaeological analysis are not difficult to recognize. Aside from negating the utility of an individual-oriented analytical perspective, such forms of treatment of the dead call forth distinct modes of analysis.

Hertz (1960) drew the pertinent sociological observation in his brief review of Huron practices:

> We find here, in a striking form, a phenomenon already observed among the Indonesians: the final ceremony always has a pronounced collective character and entails a concentration of the society. But here it is not the family or even the village, but the nation, that intervenes directly to re-integrate the dead into social communion. This action thus takes on a political significance: by dealing with all their dead in common the various domestic and local groups that form the higher unity become conscious of, and consequently maintain, the ties that unite them. In establishing a society of the dead, the society of the living regularly re-creates itself. (Hertz 1960:71–72)

In exemplifying a variation upon secondary burial rites that was the primary subject of Hertz's work, the Huron differ from his principle subject matter in the collective scale with which the rites of reburial were carried out. From an archaeological perspective the social collectivity is represented physically by thorough-going commingling of human bone and skeletal parts. The integrity of the individual is lost upon death in these rites.

Comparable treatment of individual corpses is described by Bloch (1971, 1981; Bloch and Parry 1982:34–35). By transforming the dead into indivisible unity the Merina make the ancestors "transcendent and eternal" and thereby create a force that legitimates "the social order and its authority structures." In a direction clearly following Hertz, Bloch and Parry (1982:36) state: "If we bear in mind that there is a sense in which ancestor worship creates the lineage in such societies, it is clear that we are once again dealing with the fabrication of an ideal social order out

of the transformed remains of the dead." But, they proceed further to claim that "in these instances the social group is anchored, not just by political power, but by some of the deepest emotions, beliefs and fears of people everywhere" (1982:36). In this Metcalf and Huntington (1991) see undue emphasis on the constraining effect of ritual upon human emotion at the funeral. This criticism aside, Bloch and Parry (1982:42) hold out the opportunity for developing propositions of social inference by pointing out that certain simple social groups do not place the dead in the service of creating ideology. For peoples without property the force of the analogy between death and rebirth is entirely missing—"where there is no transcendental authority to be created the dead can be left alone" (Bloch and Parry 1982:42).

Again, the principle enunciated by Bloch and Parry does not admit of direct identification in the material record. Although they make the linkages between the social and ritual, they leave the correspondence to the material world open to the archaeologist:

> These various systems—the Dobuan, Tikopian, Laymi, Merina and Lugbara—are all cases where the community in its enduring aspect is constructed by reference to the dead. Whether this is actually accomplished by means of skulls, corpses, tombs or shrines is perhaps of little significance in terms of the overall logic of the ideology—which only goes to show how misleading it may be to extrapolate collective representations about death directly from the evidence of material culture. In all these instances what is created by the mortuary symbolism is a particular group or division of society—a lineage, for example, or a local community. (Bloch and Parry 1982:36)

Just such obvious absence of single object correspondence of symbol, practice, or ideology is what motivated a number of archaeologists to search for categorical regularities rather than ones that depended upon the presence of specific things. The problem became one of devising the means for observing in contrasts and scalar grades of all manner of material things the operation of culturally and environmentally mediated social facts. This particular objective launched mortuary archaeology identified with the research program of Binford (1971) and Saxe (1970).

GENERALIZATIONS AND THEIR SOURCE

Cross-cultural studies establish generalizations that are essential in articulating statements concerning patterns in the ground with actions and behavior that created these patterns. In their favor is the fact that one learns something about their limitations along with their strengths by surveying as many relevant cases as possible. Despite the oft-cited complaint that cross-cultural generalizations are vitiated by their exceptions, the latter are really a source of methodological

strength. It is far too much to expect that any single generalization would ever cover all cases, or more to the point that the only generalizations worthy of regard are those that are axiomatic. Such an attitude denies the interpenetration of causes and presupposes a world that is made up of verities on the one side and historical randomness (or chaos) on the other. Without denying the importance of historical antecedents to differences in social behavior, custom, and belief, it is quite another thing to think of the world as divided into such black and white extremes. More realistic is to regard the social and cultural life of humans as occupying various shades of gray. Thus, any particular practice has behind it a combination of systematic and historical causes, some having more of one than another.

Cross-culturally, Binford (1971), Goldstein (1976), and others have shown that society's mortuary practices respond to economic conditions and scale of political organization. The utility of this approach has been challenged by Hodder (1980, 1982) and others (Pader 1980, 1982; Pearson 1982; Shanks and Tilley 1982). Certain of these criticisms have stood up. For instance, Precourt (1984:168) showed that "there is a statistically significant relationship between the destruction and/or burial of the deceased's movable property and the presence of predominantly nonreciprocal modes of economic transaction." He found that in four cases such modes of transaction overrode the mode of subsistence, which was otherwise "highly correlated as a predictor of burial and/or destruction of movable property." Thus, Precourt's findings were in keeping with commonly held anthropological thought that viewed mortuary practices as closely tied to economic transactions among the participants of the funeral. As a result of this cross-cultural study the causal emphasis shifts from attributes of the dead to social constructions created by the living.

But to gather a broad perspective on the utility behind the spirit of seeking regularities it is important to acknowledge that Aries (1981) and the French Annales school of historians (Chaunu 1978; Vovelle 1973, 1974) have shown rather convincingly that mortuary practices change in response to social, demographic, and even economic conditions—but primarily to the first two. Despite the criticisms leveled at cross-cultural analysis, the overall pattern of regularities points strongly to a small number of factors exercising a dominating influence on the forms that mortuary treatment takes. The relevance of a cross-cultural perspective cannot be questioned. As Precourt's study shows, however, cross-cultural analysis is prone to shortcomings shared by many methods in that a demonstration of a specific relationship does not preclude the discovery of a tighter relationship of a different kind.

The value of discovering the conditions under which a generalization operates is illustrated by Saxe's Hypothesis 6. This proposition summed up his conclusions respecting the information incorporated within the skew toward elaborateness in a minority of practices within a multipractice system for the disposal of the dead. Specifically, "The simpler a sociocultural system the greater

will be the tendency for there to be a linear relationship between number of components in significata, number of contrast sets necessary to define them, and the social significance of the significata; and conversely" (Saxe 1970:112).

In reexamination of this proposition cross-culturally, Goldstein (1976) found that ethnographically this generalization only works within particular social strata or membership groups. In a few societies, relatively low-status groups will differentiate certain of their burial treatments with just as many "contrast sets" as high-status groups—neither holding any obvious edge in the number of distinctions, or exclusive features, necessary to symbolize or set off particular practices from others. It appears that the difference between high- and low-standing groups rests in the relative expense or energy expenditure involved in the kind of distinction chosen. With these conditions in mind one can conceive of situations in which the principles enunciated in Hypothesis 6 could be employed effectively, although for the most part it has retained a rather low standing in mortuary analysis theorizing. The reason is not difficult to understand. O'Shea (1981, 1984) has shown from the practices of Central Siouan peoples from the Great Plains that the variety of distinctions symbolized in the treatment of the dead become differentially conflated through the process of decay. As a result of differential bias in what is preserved among these people's graves all distinctions tend to appear as ones that symbolize status despite the fact that graves were arranged with a larger number of distinctions given symbols.

Cross-cultural studies are not the only source for generalizations necessary for bridging behavior and material remains. Hodder (1980) and others (Pader 1982) make use of archetypal historical and ethnological examples on which to base their analysis. Further afield, it has been commonplace to cite the unexamined generalization that children are interred with wealth only when their parents were wealthy. The response to the presence of a wealthy child burial has been to leap to the conclusion that ascribed, or inherited, status was a property of the associated social community. Although the generalization behind the conclusion has been critiqued, its popularity as a credible generalization seems to rest more on its internal logic than on any examination of the strengths and limitations of the record, either cross-culturally or historically (Brown 1989; Hodder 1982:197; Peebles and Kus 1977; Shennan 1975). If we were to know more about the conditions under which grave wealth accompanied children holding ascribed status, mortuary studies would be empowered with a conditional generalization; however, for the present moment, the presence of grave wealth among the young cannot be tapped with any assurance.

Virtually any serious student reaches either to principles of one's own choosing or to ones adopted from a particular theoretical stance (O'Shea 1984). The question one should ask is how appropriate examples are chosen and by what logic and what set of priorities. Our problem, thus, is now to identify the determinate factors and the conditions under which they are most likely to

operate. Such a task, however, is made messy by the relatively small number of cases that have been made available through history and ethnology, and by the poverty of information on variability within societies when one suspects that several instances were present together. Add to this, the ever-present problem of reflexivity between burial treatment and criteria for selecting any treatment, and one can come to appreciate the shortcomings of the record for the kind of analysis before us (Braun 1981; Kerber 1986). Not only do we need to know that chiefs (for example) are treated in a specific manner but that those so treated are always chiefs.

All of these difficulties are illustrated by the frequent listing of a single treatment for many non-Western small-scale societies. This single-burial treatment is invariably the most conspicuous (read: elite-oriented one), the most likely to be witnessed, and the most readily admitted to outside eyes. Other treatments are less likely to come to the attention of visitors. This shortcoming represents a tough hurdle to overcome because of the limited opportunities that small populations present for observations of all forms of burial treatment (Chapman 1987). One could spend years observing the entire range (Levine 1979). These problems aside, cross-cultural study of the widest range of examples, including modern history, presents the largest range and most convincing basis for establishing the credibility of any argument from historical example.

THE SAXE–BINFORD PROGRAM

As a signal break with the cultural–historical perspective to the study of burials, the efforts of Saxe and Binford represent an experimental approach to the serious use of one of the more common forms of archaeological information as a vehicle for sociological analysis. As with all beginnings it is difficult to separate the shortcomings in the means with the logic of their goals. But such a sorting out is called for if any benefit is to be drawn from their work.

After a flurry of activity, archaeological research drawing upon their theoretical perspective has settled into a specific direction. In the diversity of approaches adopted in subsequent research into mortuary practice, a common recognition of certain lessons to be drawn from applications of the Saxe–Binford approach has been lost sight of. With the benefit of hindsight we are now in a better position to appreciate the strengths and weaknesses of their theory. Accordingly, I would like to review the principal strengths of mortuary analysis and to advocate what can be termed a regional perspective as holding great promise for future work.

The widespread flack that the Saxe–Binford mortuary analysis program has run into is a testimony to the seriousness of its claims. Criticism has been leveled at various points of their program, some relatively technical or methodological; other criticism that is more important here focuses on warranting assumptions, such as

the usefulness of cross-cultural analysis, and the relevance of social factors for understanding mortuary practices. In fact, it is on the primacy of ritual factors, rather than social ones, that some archaeologists have rejected the Saxe–Binford theory as useful for analysis of prehistoric remains (e.g., Hodder 1982; Pearson 1982). This rejection is somewhat premature, because it is tantamount to throwing the baby out with the bathwater. The dispute over relevant perspective remains critical, however, and it is one that is central to my assessment.

All theoretical initiatives have a way of taking on a life of their own; that is, they move into new research directions and usually produce unanticipated results. This history of use is in many ways dictated by the utility of theory to help explain very specific archaeological, cultural–historical, and cultural–evolutionary problems. Hence, a theory may have been held in great expectation at the outset, but unless it finds at least one explanatory home, it will remain merely a fond hope, rather than part of a useful vehicle for articulating some about-to-be-discovered explanation. Thus, though Binford and Saxe have based their theoretical position on global arguments, what is most attractive is their theory's utility in articulating specific arguments (O'Shea 1984). Thus, in one of the senses of the term, mortuary analysis becomes a middle-range theory–that is, a body of theory whose generalities are useful for advancing part of a larger argument in favor of some explanation about specific issues. Thus, contrary to original expectations, the Saxe–Binford research program has become useful not for what it claimed to measure directly but for the strength of its postulates in contributing to the building of larger chains of arguments. As will be come clearer below, their work assumes its most forceful utility when nested within very specific arguments concerning equally specific issues.

The names of Art Saxe and Lew Binford are linked to a single mortuary analysis theory because they took a unified theoretical approach to a single kind of subject matter. Although their research tasks differed, Saxe's information theory approach to the organization of patterned differences in the physical remains of the dead complemented Binford's focus on the cross-cultural strength of any proposition linking systematic differentiation in the range of disposal-of-the-dead practices with social complexity. Their unified starting point provided complementary parts to a common theory. Although each part tends to be utilized in mortuary analysis for very different reasons, their theory is more unified than usually granted in the literature. The reason for this unity is not difficult to understand. They had interacted on this and other theoretical topics for some time. They were united in their unfavorable reaction to the cultural–historical climate of the time that viewed various treatments of the dead, such as cremation, inhumation, and mummification, as historical vestiges or the result of outside influences. Hence, their interest was in disposal-of-the-dead practices that were full of striking, if not contradictory, treatments. Given this interest in why certain populations maintained relatively uniform treatments of the dead while others produced contrastive

ones, it is understandable that they should look upon all treatments as somehow role-defined on an individual basis. Thus, a focus on patterned differences in the way that individuals were treated in death called for an individually oriented theory for linking archaeological remains to behavior. For Saxe and Binford, a problem of individual treatments called for role theory. For this they drew upon Goodenough's (1965) work that rested on Linton's (1936) theory of status and role, which has been so prominent in American anthropological theory. Since both were drawn to the subject with a common problem in mind, differences in the way they tackled the problem have become less important as the strengths and limitations of their historically defined perspective have become apparent.

More generally, Binford and Saxe shared expectations of what the field of mortuary studies was useful for and how arguments could be constructed that would allow sociological information to be extracted from patterns in the treatment and final disposition of the dead. Essentially, both saw cemeteries and their contents everywhere as having a structure—in the systems sense—that had potential for informing the observer about certain organizational principles underlying the associated community, hence their focus on levels of social complexity, inherited status, and the like. Whole communities, rather than the study of isolated practices, constituted an essential focus. Part of the appeal of their research program was the prospect of making sociologically informed distinctions between societies for whom no textual material survived and for whom one was in the dark as to whether they were organized hierarchically or whether they possessed inherited political office—features of social organization that were hotly debated in certain quarters at the time (Braun 1979; Brown 1981; Peebles and Kus 1977; Tainter 1978, 1983). Although these issues were ones that mobilized initial interest, the theories of Saxe and Binford made wider claims. Theirs was a program for utilizing the material remains of both past and present disposal-of-the-dead practices to inform on certain features of associated societies.

Since the Saxe–Binford program was borne out of systems thinking, it was logical for them to make use of distinctions inherent in definitions of "levels of complexity" as the focus of their vision of mortuary analysis. Hence, in contrast to "reconstructionist" perspectives toward material culture, they were more concerned with determining useful "parameters" of complexity. Because of the commonly held perception among many anthropologists (including some archaeologists) that the real job of archaeology is cultural reconstruction, the work of Saxe and Binford frequently has been miscast as simply that (Metcalf and Huntington 1991:14–18). Although certain passages in both Saxe and Binford's works are suggestive, this characterization neither applies to the aim of their work nor to the thrust of any of principal works that have followed their lead. The telling fact that denies the role of cultural reconstruction is the systematic disregard for status assignment of the very burials that were the subject of analysis. Without any step toward assignment, it is difficult to visualize how any concrete interest in

reconstruction could ever have been present. Instead, Saxe and Binford emphasized the *social source* for patterned variability in mortuary treatments. The misinterpretation judges them according to criteria that were never meant to apply. And, while obscuring areas that have the greatest analytical power, the reconstructive label glosses over some basic weaknesses in their position that call for comment.

Role theory was held to be the analytical vehicle for expressing the differences in the way individuals behave toward each other. Accordingly, these differences formed a calculus for marking individuals in both life and death as well as forming the basis for allocation of emotion and obligation. The former is clearly delineated by Saxe's position that mortuary ritual is a medium in which social relationships entered into during life are represented at death. The limitations of this position for social analysis of archaeological remains have been aptly characterized by Kerber who states

> Saxe's theory has been called "representationist" because it takes essentially all the non-random variability in mortuary ritual to be representative of the dead ego's role in the social structure. In this model, the mourners are motivated by obligations owed the deceased, and are moved to symbolize the deceased's status in traditional ways. Implications of the model include the notion that a finite number of social identities exists to be symbolized; that the symbols employed have a univocal significance; and that obligation to the deceased is a sufficient cause for the ritual work to be done. (Kerber 1986:35)

Binford (1971:17) developed a second line of useful reasoning with his argument that differences in social response to the dead are a direct response to the size of the circle of individuals having some social obligation ("duty-status") to the deceased. Inevitably, this mode of reasoning returned to its atomistic theoretical foundations, in which the allocation of mortuary treatments was regarded as a mirror image of the structural features of the associated society (O'Shea 1984; Saxe 1970; Tainter 1977a, b, 1978). However, by unduly focusing on the specific theoretical vehicle for making their bridging arguments between a social theory and material culture, the shorthand characterization of the Saxe–Binford approach as one in which "cemetery organization equals social organization" loses sight of the strength of the underlying "economic" type of thinking they espoused. This very form of argument is one that has a great deal of undeveloped potential outside of the vehicle they chose to express their arguments. In fact, others have engaged in economic types of arguments, albeit very tentatively (Bloch and Parry 1982; Metcalf and Huntington 1991). The theoretical reliance upon role theory warranted a set of arguments for viewing all kinds of interindividual interaction within a social environment of differential allocation of resources to alternative ends. This model, which quintessentially underlies all economic thought, points to a latent strength of their perspective.

LATER APPLICATIONS

Follow-up work within the program established by Saxe and Binford took several distinct directions. Principle among these was the investigation of the implications of Saxe's Index of Componential Complexity, as developed by his hypotheses 5, 6, and 7. This principle states that the simpler the system the more the number of recognizable burial forms will match the number of variable contrasts necessary to define them, and conversely. Other principles respecting status differentiation have been advanced, but their robustness has yet to be adequately explored.

> The occasion of death involves a reciprocation from the alters involving many *identity relationships* simultaneously. Death calls forth a fuller representation of ego's various *social identities* than at any time during life. Therefore there is also the greatest probability of conflicts in compatibility occurring between social identities at death. . . . [A] choice between incompatible social identities must by made. Those involving rights/duties counterparts with the greatest degree of influence, authority, and/or power *by virtue of that set of relationships* will be chosen. (Saxe 1970:6)

Hodder (1982:199) criticized Saxe and Binford's complexity argument. He argued that where "age, sex and hierarchical divisions were not expressed in graves, it could not be assumed that the society had become less complex. A change to a less complex or less differentiated burial rite does not necessarily entail a change to a less complex society." This argument shows a confusion over the distinctions that Saxe and Binford have drawn between the funeral rite as a whole and the material remains in the grave. Neither Saxe nor Binford has represented the latter as having a simple correlation with the former.

CEMETERIES AND CONTROL OF CRITICAL RESOURCES

Saxe's Hypothesis 8 has taken on an independent existence. It states that groups are more likely to maintain formal disposal-of-the-dead areas rather than dispersed grave sites when control of restricted resources is crucial (Saxe 1970). "To the degree that corporate group rights to the use and/or control of crucial but restricted resources are attained and/or legitimized by means of lineal descent from the dead (i.e., lineal ties to ancestors), such groups will maintain formal disposal areas for the exclusive disposal of their dead, and conversely" (Saxe 1970:119). The principle has been restated even more emphatically; to wit, the more that certain restricted resources are crucial to the system the more likely that formal burial areas will be used to maintain claims to those resources. This hypothesis is a development of Meggitt's (Lawrence and Meggitt 1965) modeling of New Guinea

practices and has found independent support in the recent shift to formal cemeteries that Malaysian swidden farmers made when they were forcibly settled in permanent villages (Saxe and Gall 1977). Other examples abound in the anthropological literature (Bloch and Parry 1982; Metcalf and Huntington 1991). Archaeologists continue to apply what appears to be a stable proposition (Chapman 1987; Charles and Buikstra 1983; Goldstein 1980, 1981).

Although this proposition has been criticized, the examples placed in evidence dispute a connection that was never claimed—that of the association between residence and control of resources (Hodder 1982:198; Pader 1982; Pearson 1982). Indeed, the emblematical example, that of the placement of the Merina tombs, appears to be an outstanding instance of confirmation rather than the opposite. Uncertainty here is due to the absence of detailed information. But what has been described by Bloch (1971, 1981; Bloch and Parry 1982) leaves little doubt that the Merina tombs are a conscious symbol of the continuity of the corporate property-holding kinship group—conceptually eternal and indivisible. The ossuary treatment of the corpses is described as an embodiment of the ongoing concern that property rights to highly productive lands not be dissipated through exogamous marriages. As postulated by Saxe's proposition, these lands are environmentally circumscribed. Gradients in social prestige characterize these tomb-anchored kin. Significantly, proximity to what must have been the principle village of these bilateral descent groups (called demes) was regulated by custom, the ordinary tombs being restricted to the edge of settlement, whereas noble tombs had the right to placement in the village. This logic of location was carried further by the placement of the royal tombs within the palace itself. Competition over critical resources (rice-producing irrigated lands) seems to have led to the very result that Hypothesis 8 would lead one to expect—the use of the ancestors to validate claims to critical resources. The logic was carried into the architecture of the Merina kingdom in an attempt to appropriate the local-level logic within the rationale for the state.

Here, as in Hodder's counterexample of the Nuba practices, it is the apparent dispersion of deme members beyond the bounds of a single village that has been cited as the problem with Saxe's proposition. But this is a relatively small problem since residence was never at issue in the first place. Furthermore, it is difficult to assess the effects of two factors on dispersion of deme members. First, the stone or concrete tombs are massive investments intended for long-term use that may extend well beyond the settlement arrangements of the founding generation. Second, the process of dispersion must have been accelerated in recent times due to the stepped up tempo of commercial life attendant upon modern transportation and communication. These forces could easily swamp customary social arrangements that were geared for an entirely different scale of social activity.

A detailed restudy of Saxe's thesis has necessitated some reformulation (Goldstein 1976:61). The maintenance of a permanent, specialized, bounded area

for the exclusive disposal of their dead was not invariably observed under the conditions stated in Hypothesis 8. Instead, the corporate rights of a lineal group were reaffirmed more generally by popular ritual. She observed

> that one of the basic components of Saxe's hypothesis generally does prove to be true. Economic and environmental pressures, resources, and inheritance do tend to structure the disposal domain. However, Saxe's hypothesis was not found to be universally applicable, since a lineal corporate group controlling critical resources does not always have a formal disposal area. If the area does exist, however, the reason does seem to be corporate lineal control. Further, the less formal the disposal area, the more alternative possibilities are available in terms of types of social structure. (Goldstein 1976:58)
>
> Hence, if there is a formal bounded disposal area, used exclusively for the dead, then the culture is probably one which has a corporate group structure in the form of a lineal descent system. The more organized and formal the disposal area is, the more conclusive this interpretation. (Goldstein 1976:62)

Here, we have a common limitation to generalizations that works conservatively to understate the likelihood of correct inference.

Charles and Buikstra (1983:119–120) elaborated on these modifications:

1. Utilization of formal cemetery areas will correlate with sedentary subsistence strategies employed by the group(s) using the cemetery.
2. The degree of spatial structuring present in the mortuary domain will correlate with the degree of competition among groups for crucial resources.
3. Within the larger society, corporate groups will be distinguished by inclusion in separate cemeteries or in spatially distinct areas within a single cemetery.
4. Inclusion of individuals in the cemetery implies inclusion of those individuals in the corporate group.

With these additions Saxe's proposition moves into archaeologically fruitful territory, leaving behind the original componential framework with which he initially set out.

THE LIMITATION OF BURIAL AS STANDING FOR THE FUNERAL RITE

In the foregoing reevaluation of Saxe's proposition respecting the archaeological signature for the existence of lineal corporate assertion of rights to critical resources, it was plain that the total funeral rite, not the physical disposal of the dead, is the appropriate frame of reference for generalization. Observed regu-

larities apply to this rite and not to the component visible archaeologically as the physical disposal of the corpse. By implication, the componential structure of treatment-of-the-dead categories does not constitute the proper domain of inference as well.

This conclusion is borne out of the difficulties with Tainter's (1977a,b, 1981, 1982, 1983) and Braun's (1979, 1981) analysis of the Middle Woodland period Klunk and Gibson mound groups (Brown 1979, 1981). Tainter's work represented one of the more direct extensions of the Saxe–Binford program. The two Havana Hopewell mound groups constitute splendid examples of highly differentiated mortuary practices, with some of the dead being interred collectively in log crypts, while others were interred either in simple pits or in mound fill. This brief statement hardly does justice to the variability. Tainter approached the problem by raising the question of social stratification's presence here. The striking differences in matters of elaborateness in burial treatment, tomb investment, and scarceness of grave goods appeared to support such a judgment. Key to his approach to the problem was to regard each burial as a terminal treatment in which each was directly comparable to the other and that the objects found near the dead were truly associated with individuals. The analysis then became one of measuring differences in the componential space embracing all of the burials. He employed information statistics and an unexamined principle of energy expenditure to measure these differences. His reading of the results led him to advance the rather unlikely thesis that the graves were differentiated into six social strata. Braun challenged Tainter's measures and his analytical procedures, but accepted the assumption that each burial was directly comparable to another. Brown (1979) showed that the mortuary crypt burials were a collective treatment in which grave goods were not as conclusively associated with nearby skeletons as were the noncrypt burial associations. Moreover, the crypt burials were merely a phase in a program of mortuary treatment that included exhumation. Remains were redeposited on the crypt ramp surfaces and probably in the earthen fills of nearby decommissioned mounds. Not only did grave goods have different contexts but the greatest contrast in the presence of grave goods was merely a reflection of the number of times the skeleton was moved, not a matter of social standing. The social strata conflated to a single level, in which the remaining differences could be more satisfactorily explained as horizontal differences between those having rights to crypt burial and those that did not.

In the process of establishing arguments over the existence of ascribed (inherited) status, Braun (1979) was able to demolish Tainter's argument in favor of such a hierarchy of status at Klunk and Gibson as well as to offer some useful rules of thumb for recognizing the existence of petty chiefdoms in general. These rules have proved useful in subsequent analyses (e.g., Brown 1981; Gilman 1990; Peebles and Kus 1977). But the attempt to apply the rules of componential analysis to a system of collective mortuary rites was doomed since it ignored some

important operating assumptions—the equivalence of graveyard associations and the conceptual representativeness of the sample.

Representativeness is critical. Because of the collective treatment of the dead according to unknown and arbitrary rules, the real number of individuals processed through the crypts is unknown. Those that remained behind for archaeologists to study constitute an artificial set, perhaps created deliberately by the mourners. In Havana Hopewell mounds it is common for some crypts to be empty, while others may contain only a single skeleton. The remains of the population that was presumably served by the crypt are nowhere in sight. Too many uncontrolled factors exist to regard the similarities and differences among the individual funerary events as an adequate base of social inference. Although important conclusions could be reached by Braun (1979, 1981) respecting the contrasts provided by the graves, the level of sociological analysis that Tainter sought from the Saxe–Binford program could not be achieved from this type of data set.

The difficulties raised by graveyard collections with obvious, but uncontrolled, biases may be overcome by taking a different tack, one that examines the distribution of treatments among a biologically modeled population of graves.

THE PROBLEM WITH OBJECT-ORIENTED CLASSIFICATION

The most common approach to mortuary analysis is to classify burials into categories (e.g., Pader 1982). This object-oriented classification has disadvantages. It has all of the limitations of artifact classification by object-clustering, as Cowgill (1982) has demonstrated in a comparison with analysis by variable clustering. Even more damaging is the methodological lack of fit with an appropriate theoretical position as stated above. To be effective in studying differential wealth disposal—a commonly stated goal of mortuary analysis—Orton and Hodson (1981) have demonstrated that the case size has to be enormous by archaeological standards. We have to remember that when, for example, economists examine income of households, the Gini Index produced, in order to be mathematically robust, draws upon thousands of cases. Much more effective is an attribute analysis and one placed within the biological context of a mortality profile. Buikstra's (1981) approach to Koster Archaic burials is the first application of the "R-mode" analysis cast within the expectations of a mortality distribution.

This approach starts from expectations generated by specific types of mortality profiles. Depending upon whether one is working with an attritional profile or a catastrophic distribution of age at death, one has specific expectations about the distribution of age categories. Where there is a significant shortfall in any one age group, Buikstra (1981) showed how one could argue that the gap in the sample in hand defined a portion of the population given alternative mortuary treatment.

Asymmetry and differential distributions of grave goods, skeletal processing, and other mortuary attributes multiply the possibilities of the same fundamental strategy of analysis. In the Koster Archaic analysis the use of three locationally distinct age and sex samples formed a complementarily complete mortality profile that led to the identification of a differential set of treatments of the dead, each with different formal characteristics.

The greatest success of mortuary analysis has been at the regional scale. As will become clear in the following—this success is borne out of emulation with a biological perspective that is inherent in a multisite approach. This tie to the human biological perspective is not a casual analogy but has everything to do with the economic budgeting perspective that is a cornerstone of mortuary analysis logic today.

Analytical approaches on a regional basis have been particularly successful (Beck 1990; Kerber 1986; Milner 1984). By pooling cases over a series of samples, these investigations have identified rare, but significant, treatments. Such analyses are also more sensitive to subregional variations that would be difficult to identify with confidence otherwise.

Although the number of studies is growing apace—over 200 alone have been entered into a bibliography I have been compiling—a relatively small number are regional. Most studies take as their object of analysis the mound, village, or cemetery. The result is to tether their analysis to peculiarities in the sample recovered and to site formation processes. Hence, it is not surprising that many analyses, in contrast to the kind of regional studies described here, are often equivocal and highly dependent upon initial assumptions respecting the completeness of the sample.

BEYOND THE REPRESENTATIONIST PERSPECTIVE

Returning to the problem of identifying the factors responsible for variability, the most important advance in our thinking since Binford and Saxe has been certain adjustments to our epistemology. Saxe's thesis treated mortuary behavior as dependent upon variation in individual persona—an aggregate "social personality." Although this proved to be a good starting point to thinking about variability in mortuary treatment internal to a society, subsequent analysis has directed our attention to the primacy in use of the dead by the living.

Pearson (1982) has detailed the obvious weakness of the representationist formulation—specifically, its inability to explain contemporary Western mortuary practices. He focused on recent changes in monumental memorializing of the dead in England. Although the local Cambridge record was drawn upon, he might as well have used any one of a number of examples throughout the Western world since the changes registered in his study community conform to a well-known

modern trend (Aries 1981). Specifically, he discovered that funeral expenditures and outlays for monuments did not correspond with social status. The value of residential property did not correlate with the cost of the funeral of the deceased. Contrary to the elaborations the Index of Componential Complexity would have us expect, wealthy individuals were provided with cheaper funerals on the average than nonwealthy. Furthermore, cremation, the burial treatment registering the fewest contrast sets, was more common among the upper classes, where one would expect greater monumental investment if not more expensive funerals. This finding does not contain any surprises, but in Pearson's hands we are led to focus on a larger field of mortuary practice that enables us to bring contemporary Western practices into a unified theoretical perspective.

Trinkaus (1984) and others have amplified Parker–Pearson's counterperspective by showing that economics and politics are more appropriate conceptual models upon which to base a mortuary theory than social personality theory. Her argument, drawn from practices influenced by Muslim rites, returned to the point developed by Goldstein (1976) that the physical treatment of the burial is frequently not the locus at which the generalizations operate but rather at the more inclusive arena of the funeral rite as a whole.

> The expression of rank is indeed present but in an "inverted" sense in which high rank and lavish possessions during life are expressed in death with much nonmaterial symbolism and lavish nonpermanent display (feasting, elaborate hearses, flowers, presence of significant persons, etc.). The emphasis is heavily shifted from mortuary remains to mortuary ritual. (Trinkaus 1984:675)

There is a convergence between the politically oriented theory presented here and the Saxe–Binford position of cemeteries as individual status representations, as Kerber (1986:62–63) has concluded:

> In order for the Saxe–Binford model of mortuary behavior as representation to work reliably, one of the assumptions that must be met is that the statuses to be represented be finite and defined. Thus, the degree to which the expectations of the Saxe–Binford model may be expected to fit a given set of mortuary data is itself a function of the political structure of the society which produced them. The greater the transmissibility of power, the more likely it is that the dead are buried in a manner befitting their former status.

Hence, the representationist position focuses on a specific range of mortuary systems. In this sense it is targeted to a special case of the position of funerary rites as politics. While this conclusion remains unexamined in detail, there are encouraging reasons to think that this linkage has some merit.

Let me sketch such a linkage. Burial treatment can be visualized as an act of allocation that survivors confer upon the dead. This is an economy of mortuary ritual, in which funerary treatments are allocated to alternative ends. Binford (1971) set this line of thinking in motion by arguing that a relationship adhered

between the size, expense, or duration of the funeral and the number of individuals participating in the funeral. So if we visualize burial treatments as a stock out of which are drawn some but not others, then the size, effort, or duration of the funeral selected can be said to respond to budgeting considerations measured in terms of time, effort, and resources.

In respect to time, effort, and resources there is a fixed upper limit set by every society, and in small-scale societies with low energy budgets this limit is relatively low. It follows from the budgeting model that disproportionately large withdrawals from the stock of treatments have to be balanced by lesser withdrawals. Hence, the disproportionately large treatment one individual receives, the less the remainder of the dead can receive. In other words, we have a situation in which allocation guides differential treatment.

In this light, extravagant display can be interpreted as the consequence of an escalation in the limit of labor and resources available for deployment in funerals. In societies that encourage economic accumulation, competition has the potential for producing extravagant funerals. But any rise in the total pool of labor and resources does not alleviate the burden of economic principles to the allocation of resources among the dead. At the other end of the scale, in nonaccumulating societies, Binford drew attention to the relative importance that the circumstances of death and the number of individuals drawn to the funeral have in determining form and size of the mortuary treatment.

The relationship to the nonrepresentationalist perspective can be gleaned by the statement of Bloch and Parry (1982). They observe in their overview that many mortuary rites have an underlying premise that can be expressed as a limitation of resources. How these limited resources are allocated was made great use of in their comparative analysis of several societies. Their analysis is particularly pertinent to nonrepresentationist topics in the present sense. For example, many rites among societies throughout the range of social complexity embody eschatological ideologies that can be said to have an underlying "vision of the limited good." Recast in economic terms, this vision implicitly recognizes that life is a limited resource. Although not a startling notion in itself, of interest here is the extent to which a wide range of mortuary practices can be restated structurally as allocation problems. It does not take much imagination to realize that the multiplication of separate allocations of limited resources could create competition among different social and ideological dimensions for symbolic representation. Potentially, the outcome of such a competition would be a subordination of some dimensions to others.

In sum, acts and behavior that can be categorized as either representationist or nonrepresentationist are alike in being subject to differential allocation among a burial population. As such, this differential allocation expresses symbolically qualities among the deceased or political uses of the deceased. Precisely which aspect is being expressed depends totally on the values the analyst assigns to the

allocated symbol, whether it is a material object category or some patterned behavior.

The position taken in this chapter is that the controversy over the use of burials as symbolic representations of the social order or as objects symbolizing political manipulation is not a problem of the exclusive legitimacy of one or the other perspective in mortuary analysis. Instead, they are two perspectives to symbolic representation that are potentially coextensive. The economy of symbols framework adopted here helps place the two views on an equivalent footing by revealing the effects of the economy of differential allocation of scarce resources on modeling symbolic patterns.

MORTUARY PRACTICES IN REGIONAL PERSPECTIVE: THE EXAMPLE OF THE EARLY ATTIC STATE

I want to close with a review of Ian Morris's (1987) analysis of Dark Age Attic Greek burials spanning a period of over 600 years. I have singled out this study from many exemplary ones because it made use of mortuary analytical principles to advance a series of arguments that drew from very unevenly recorded old burial data.

Morris's thesis is that the Attic "citizen state" founded at the end of the sixth century B.C. was the product of long-term changes in political and social structure during the preceding Dark Age. The challenging part of his thesis was the position taken from his multipart analysis of burials—to wit, that the dramatic political changes inaugurated by Cleisthenes' reform were but the formal recognition of a process already well entrenched. This argument is important because of Morris's use of middle-range mortuary theory to advance his thesis in combination with demographic, settlement, and literary evidence.

The mortuary side of his argument is based on an extensive, though uneven, record of cemeteries, burial plots, and fragments of cemeteries recovered from both large block excavations and salvaged bits. What is remarkable is how an effective argument can be mounted, even when the data are so uneven in quality. To add to these problems, periods of burial by inhumation are punctuated by a period of several generations of rather thorough-going cremation. Understandably, different kinds of analyses were undertaken on a regional scale (all of Attica) to secure reasonably robust patterns that could overcome the obvious shortcomings of individual graveyard excavations. Morris anchors the beginning of the Dark Age burial sequence in a social context in which graveyards are placed near crucial resources, and during a period when a large segment of the population had access to graveyard treatment, albeit in segregated plots. Treatments and grave goods were made according to social rank. In the succeeding Dark Age this structure changed, but Morris advanced a convincing argument that the proportion of

adults receiving burial contracted to the highest ranks only and that children and subadults were age groups that declined in graveyard representation during the period in which rights to formal burial shrank.

What makes this thesis particularly convincing was Morris's demonstration that an earlier evolution to city-state occurred around 750 B.C., followed by a return to the previous condition before the final, dramatic change led by Cleisthenes. The dramatic expansion to a balanced age structure that took place before Cleisthenes set the stage for a typical Classical period treatment of the dead. This change can be connected with certain social and political changes described in literary sources. This transformation is of great significance because just such a change took place earlier around 750 B.C. as well. Furthermore, this earlier expansion was accompanied by an equally dramatic expansion in the diversity of burial treatments using Saxe's Index of Componential Complexity in the mortuary treatment domain. Attica was not alone in this shift. Corinth and Argos also saw a similar shift although no Attic-type relapse occurred afterward. The significance of this shift is indicated by the increase in regionalism of mortuary treatment after a long period of relatively homogeneous burial form throughout Greece. This period of uniformity was one in which grave wealth, particularly in metals and commonly in the form of armor, expressed the wealthy, elite stratum of the adult dead.

Several problems that have bothered Greek archaeologists had to be overcome. These are the up-and-down shifts in the number of burials prorated per decade, shifts in treatment of the dead, poor and unreliable aging and sexing of skeletons, generally small and dispersed burial plots, and abrupt changes in the grave form and the use of grave goods from period to period. Against these hurdles to analysis, a regional approach was the only sensible solution. Given the size and scale of the region, the demography of burial had to be analyzed first. The quality of the data led to calculating only the ratios of children to adult burials, including the use of proxy variables such as the relative size of graves in order to estimate this ratio for cremations. Graveyards were classified into age-balanced and child-poor. After the demographics were established, then the diversity of body treatment, number of burials per plot, the size of plots, and the diversity of grave wealth could be fruitfully examined within the framework established for a six-century period.

In sum, under Morris's guidance the principles of mortuary analyses demonstrated that they have much to contribute to the shaping of persuasive arguments respecting Attic state formation, to take one particular case study. To be successful, problems on such a regional level require multiple, intersecting arguments drawing from the widest range of principles.

For years archaeologists have identified burials as the prime material for access to past social and ideological domains (Chapman, Kinnes and Randburg 1981; O'Shea 1984). This faith has supported a great deal of particularistic analysis proceeding from unexamined premises. The Saxe–Binford research program led

the shift away from such ad hoc use of burial information. At first, research focused on intrasite variability and lately it has gravitated toward examination of mortuary variability on a regional scale. It is with this regional perspective that burials as reservoirs of information have made their greatest contribution to the study of the archaeological past.

CONCLUSION

In the period since Saxe and Binford first introduced their research program, mortuary practice research has grown considerably in archaeology and sociocultural anthropology. The research agenda for the social analysis of mortuary practices has expanded along with this growth. The fumbling beginnings in this endeavor have been replaced by increasing confidence in the tools for analysis with each new exploration of different data sets. However, certain problems remain to be adequately resolved. Chief among these is the satisfactory incorporation of the benefits of the Saxe–Binford programmatic perspective. This chapter has offered a solution to the problem of seating the individualist and representationist positions they represent in a broader conception of mortuary practices as a kind of "politics of ritual." Central to my working out of the problem has been to sketch an "economy of symbols" framework within which to seat the allocation of ritual tasks represented by differential mortuary treatments of individuals and collectivities alike. Although areas of disagreement remain, certain issues can be more clearly delineated than they have been in the past.

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Part II

Landscapes and Mortuary Sites

Landscape analysis of mortuary data emphasizes the spatial arrangement of mortuary sites relative to other aspects of regional dynamics. Models of subsistence settlement systems, craft specialization, exchange, economics, labor, and patterns of broader material culture are analyzed in conjunction with the communal dialogue of symbols incorporated in the mortuary sites themselves.

The regions discussed in the following chapters are diverse and have been studied using a variety of models. However, in each case the mortuary site and not the individual burial is the unit of analysis used. In the cases discussed in this section, the mortuary sites include megalithic architecture, earthworks, effigy mounds, or other highly visible markers as to their location. In each case the highly visible nature of these mortuary sites has produced a plethora of interpretations as to their function. Such interpretations have included mortuary monuments as communal meeting places, boundary markers, political statements of equality (or of inequality), and vacant ceremonial centers. Although many of these alternative explanations will continue to be debated, it seems that the perspective gained by adding mortuary data to regional analysis takes us a step further in building more powerful models with which to examine the dynamics of change in the geocultural landscape.

Chapter 2

Ten Years After—Megaliths, Mortuary Practices, and the Territorial Model

ROBERT CHAPMAN

INTRODUCTION

Ten years ago I published a paper (Chapman 1981) in which I developed the argument proposed by Colin Renfrew that the earliest West European megalithic tombs acted as symbols of territoriality among agricultural communities. This argument was presented as an alternative to the discredited diffusionist model by which formal similarities between such tombs, and the mortuary practices that they embodied, were interpreted as measures of the degree to which ritual practices and beliefs were shared between communities on a regional scale. I was keen to develop the ideas that the variability visible in the archaeological record of such tombs from southern Scandinavia to the Mediterranean required explanation, that understanding would only appear when we studied variables not cultural traits, and that our interest was in a variety of problems, using different models and measuring different data at different scales of analysis. Reaction to the territorial model has been both positive and negative, and is instructive of the ways

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in which archaeologists pursue research. Hence, it is my intention in this chapter to look back on the last 10 years of such research, to examine critically the territorial model, and to use the archaeological record of megalithic tombs as a specific set of mortuary data relevant to the regional perspective adopted in this symposium.

There are good theoretical and empirical reasons for analyzing monuments such as megaliths, or indeed any tombs or cemeteries, within a regional rather than a strictly local context. Characteristics of cultural evolution have been the increasing scale, integration, and interdependence of social, political, and economic systems. With increases in these variables, in association with increases in complexity, the potential for purely localized behavior independent of wider constraints, networks, or resources decreases. Mortuary practices are no exception to this pattern, and may involve the participation of individuals drawn from a variety of social groups and localities, from the local community to the regional polity. The ritual behavior that takes place as part of death's rites of passage also varies in its temporal and spatial contexts. In exceptional cases, such as that of ex-President Marcos, intercontinental journeys have been undertaken! In the third millennium B.C. in the British Isles, there are good empirical grounds for arguing that the body parts of some individuals were circulating between tombs and communities (e.g., Richards 1988:49, on Neolithic Orkney; Thomas 1991:113, on Neolithic southern England). If we move from bodies to grave goods, tombs may be only one context in which deposition of such items takes place as part of competitive social strategies. Variability in the frequency and kinds of objects found in mortuary contexts needs to be understood within the wider context of deposition in other parts of the archaeological record (e.g., in hoards, rivers, bogs; see Bradley 1990). When "valuable" or "prestigious" items of material culture are deposited with the dead, the decision to remove such items from circulation may have important consequences for social interaction, depending upon the amounts deposited, their role in marking out status or in establishing and maintaining interaction, and the ease with which raw materials or the finished objects can be obtained (Chapman 1987a).

If a regional perspective is important for the analysis of mortuary practices, it receives greater emphasis when considering funerary monuments such as west European megalithic tombs. The construction of such monuments required the cooperative or coerced efforts of local and more regional populations, depending upon the scale of the construction, the proximity of raw materials (usually within 5 km—see Thorpe and Williams-Thorpe 1991), and the availability of the labor force. In the largest cases, such as those of New Grange in Ireland, or Maes Howe in the Orkneys, the size and conception of the monument clearly required the participation of members of the regional polity in its construction. In turn, such monuments were meant to be seen by the living, and once constructed, they remained a part of the cultural landscape for generations.

MEGALITHS AND TERRITORIES: THE MODEL

In 1976 Colin Renfrew proposed that the appearance of megalithic tombs 7000–6000 years ago in Atlantic Europe represented the expression of territorial behavior in small-scale segmentary societies under conditions of population stress (Renfrew 1976:200). Segmentary societies were defined as lacking "the centralized, hierarchical structure of a chiefdom or state" and consisting of autonomous cellular and modular units (Renfrew 1976:204). Territorial behavior was defined biologically as "serving to regulate population densities at a lower level than the theoretical carrying capacity calculated on the basis of the available food supply" and implied "the habitual use of a specific, localized area which constitutes the sphere of influence of the individual or group" (Renfrew 1976:204, following Wynne-Edwards). Such behavior was triggered by the growth and expansion of colonizing farming communities spreading through Europe from southeast to northwest, where further expansion on the edges of the continent was limited and where stress was increased by the presence of "substantial" hunter-gatherer populations. Megalithic tombs became the symbolic means by which territorial behavior was expressed in the landscape. Such behavior would be expected to appear "almost simultaneously" over large areas and "several generations" after the initial adoption of farming. Renfrew proposed three criteria by which this territorial behavior could be recognized in the archaeological record of megalithic tombs: first, simultaneously functioning tombs should exhibit a regular rather than a clustered spatial distribution; second, "that the territories . . . are generated by the activities of the living members of such societies rather than by specialized territorial behavior of cross-cutting groups"; and third, that there be no evidence of a social or political hierarchy (Renfrew 1976:205). Renfrew recognized that the last criterion could not be met in a number of areas of western Europe, mainly during the later periods of construction and use of megalithic tombs (e.g., the Boyne valley in Ireland, the Orkneys), but that it seemed to be supported by the data from the earliest periods, with which he was concerned.

Renfrew's model essentially combined social and demographic processes, and developed out of the view of European agricultural colonization embodied in the "wave of advance" model of Ammerman and Cavalli-Sforza (1973). He offered the generalization that megalithic tombs were territorial markers for segmentary societies to account for "many, although not for all," such tombs. Using specific ethnographic analogies from Pacific island societies, and the generalization that the symbolic expression of territory focused on the middle of the "home range" (Renfrew 1976:206; note that he subsequently modified this position to argue that a territorial marker need not necessarily be centrally located—see Renfrew 1979:222), he applied his model to the archaeological record of two islands, Arran in west Scotland and Rousay in the Orkney islands off the north coast of Scotland. Following an earlier publication (Renfrew 1973:146–56), he used Thiessen poly-

gons to define roughly equally spaced territorial units around the known megalithic tombs (Figure 1). The existence of such units in the past was strengthened, in Renfrew's opinion, by the observation that the island of Arran had never been subjected to intensive farming. Thus the known distribution of tombs could be taken as directly representative of their distribution in the Neolithic. Even though settlement traces were absent from the archaeological record, it could be claimed that analysis of tomb distributions using the territorial model had led to the definition of social units.

Five years after the publication of Renfrew's paper, I used primarily anthropological, rather than demographic, arguments to examine the link between megalithic tombs and territoriality. Using cross-cultural ethnographic analyses by Arthur Saxe (the famous Hypothesis 8—Saxe 1970; see also Saxe and Gall 1977 for a study of the processes by which formal disposal areas emerged among the Temuan of Malaysia after the Second World War) as amplified by Lynne Goldstein (1976), I proposed that megalithic tombs, like cemeteries, were examples of formal disposal areas by which corporate groups utilized lineal ties to the ancestors to control access to crucial but restricted resources. Goldstein's cross-cultural analysis of 30 societies led her to reformulate Saxe's hypothesis as follows:

> A. To the degree that corporate group rights to use and/or control crucial but restricted resource(s) are attained and/or legitimated by lineal descent from the dead (i.e., lineal ties to the ancestors), such groups will, by the popular religion and its ritualization, regularly reaffirm the lineal corporate group and its rights. One means of ritualization that is often but not always employed is the maintenance of a permanent, specialized, bounded area for the exclusive disposal of the dead.
>
> B. If a permanent, specialized, bounded area for the exclusive disposal of the group's dead exists, then it is likely that the corporate group has rights over the use and/or control of crucial but restricted resource(s). This corporate control is most likely attained and/or legitimized by means of lineal descent from the dead, either through an actual lineage or through a strong, established tradition that the critical resource passes from parent to offspring. (Goldstein 1976:61)

This restatement of Saxe's hypothesis is very precisely formulated to specify the conditions under which it accounts for the ethnographic sample. Corporate groups have been defined by anthropologists according to different criteria, but, as has been suggested by Hayden and Cannon (1982:134), the most useful definition for archaeology is that proposed by Goodenough: "groups that function as individuals in relation to property." Lineages and descent groups are good examples of corporate groups. Crucial but restricted resources many range from land (e.g., arable, pasture, or forest) to sea (fishing rights), cattle, water, fruit trees, and traded materials. The hypothesis does not specify the conditions under which resources may become restricted, and it was no intention of either Saxe or

Figure 1. Territorial organization of megalithic tombs on the island of Arran, as defined through the use of Thiessen polygons (after Renfrew 1976: Figure 6). Contours at 100-m intervals, modern arable land stippled.

Goldstein to suggest that population pressure was the main cause. Also, it is emphasized that formalized disposal areas such as cemeteries or mounds are only one means of symbolizing the rights of lineal corporate groups. One alternative might be domestic shrines, as are known, for example, in the Far East. This means that the absence of formal disposal areas need not necessarily symbolize the absence of corporate groups with lineal ties to the ancestors. As Goldstein writes, "considering the wide range of variability in cultures, there is a low probability that certain groups, even in similar economic and environmental conditions, will all symbolize and ritualize in the same way" (Goldstein n.d.). In contexts in which formal disposal areas are absent, both Saxe and Goldstein recognized that other data on settlement patterns, subsistence, population density, resource distribution, and ritual practices needed to be compared with evidence for the treatment of the dead.

Such variability in symbolism encouraged a broad-ranging analysis of the archaeological record as a whole. It would have been insufficient simply to take the presence of formal disposal areas as a guarantee that the other attributes of these cross-cultural ethnographic hypotheses would automatically have been present in all contexts in the past. Hypotheses derived from static, contemporary contexts are tools for us to evaluate in dynamic, past contexts. Consequently, I examined the available evidence for resource exploitation, settlement patterns, and population densities in relation to the data on mortuary practices for late hunter-gatherer and early agricultural communities in western Europe. Selected regional studies of megalithic tombs identified variable spatial correlations with restricted resources such as pasture, arable, and coasts. In the case of Denmark, the very early construction of monumental tombs in the Neolithic did not match up to Renfrew's expectation that a few generations would elapse between the beginnings of agriculture and the appearance of such tombs. Pressures within preexisting hunter-gatherer populations, who were already disposing of their dead within cemeteries, were suggested as the cause of this observation.

Taken together, Renfrew's work and my own acknowledged the key role of the ancestors in the everyday life of the late forager and early agricultural communities of northwest and western Europe. Mortuary practices were related to social, economic, and demographic variables. A model was provided by which the spatial patterning of tombs within local and regional landscapes could be understood. This model has been the starting point, or has been invoked as an explanation, for case studies analyzing the location and distribution of megalithic tombs in a number of parts of central and western Europe during the last decade. The model has also been the subject of criticism, but before considering such criticism in detail, I will give two examples of analyses that may be considered typical.

Gabriel Cooney (1983) studied the spatial relationship between megalithic tombs and environmental variables in the province of South Leitrim, Ireland. In particular he observed a close correlation between tombs and small (less than 10

ha), discrete patches of "rockland" soils, which are well drained and thought to be the best agricultural soils in the region. A total of 14 out of 21 tombs are located on rockland soils, and all but 1 of these tombs is located within 1 km of these soils (Figure 2). Here is a resource—agricultural land—that is spatially restricted and quite clearly of critical importance to prehistoric communities in this region. That this resource remained of importance can be seen by the construction and use of different types of megalithic tombs, possibly over a period of 1500 years.

A focus on access to resources also characterizes Torsten Madsen's research on settlement and land use in Early Neolithic Denmark (Madsen 1982; Madsen and Jensen 1982). For the beginnings of agriculture at about 3100 B.C., Madsen argues for extensive cultivation associated with short-lived local clearances and an emphasis on pig husbandry. Settlement was dispersed. During the period ca. 3100–2800 B.C., low, earthen long mounds containing one to five individuals were constructed. By about 2700–2600 B.C., the first truly megalithic tombs appeared, in the form of stone-built chambers surrounded by circular or rectangular stone settings ("dolmens"). Formal and constructional continuity, as well as the small number of individual interments, link these earliest examples of monumental tombs. The following Middle Neolithic period, beginning about 2600 B.C., witnessed an expansion of the settlement area, an increase in population density, permanent clearances, increased cereal production, a switch from pig to cattle breeding and an explosion in monument construction. Madsen has analyzed the distribution of Early Neolithic residential and funerary sites in relation to that of resource types. "The general conclusion was that low lying areas close to major watercourses and mainly in the coastal zone were preferred for settlement. Furthermore a diverse environment was sought after with a slight preference for sandy soil in the actual settlement area" (Madsen and Jensen 1982:78). Madsen argues for a relatively high dependence on animals, and the use of damp, low-lying areas for livestock grazing. These damp areas had a lighter, more open vegetation and were a scarcer, more confined resource than sandy or clayey soils. Analysis supports a consistently close spatial relationship between the Early Neolithic tombs, whether earthen mounds or stone-built chambers, and the main watercourses with these damp soils and more open vegetation. Madsen argues that the data support the inference that these early tombs acted as "symbolic markers of rights to land" (Madsen and Jensen 1982:83).

MEGALITHS AND TERRITORIES: THE MODEL CRITICIZED

How has the archaeological community in Europe reacted to the territorial model? What have we learned from critiques and case studies published during the last decade? To begin with, there has been the unsurprising revelation that archaeological debates can be programmatic and polemical, as each archaeologist sees what he or she wants to see in the work of others. At the same time, theoretical

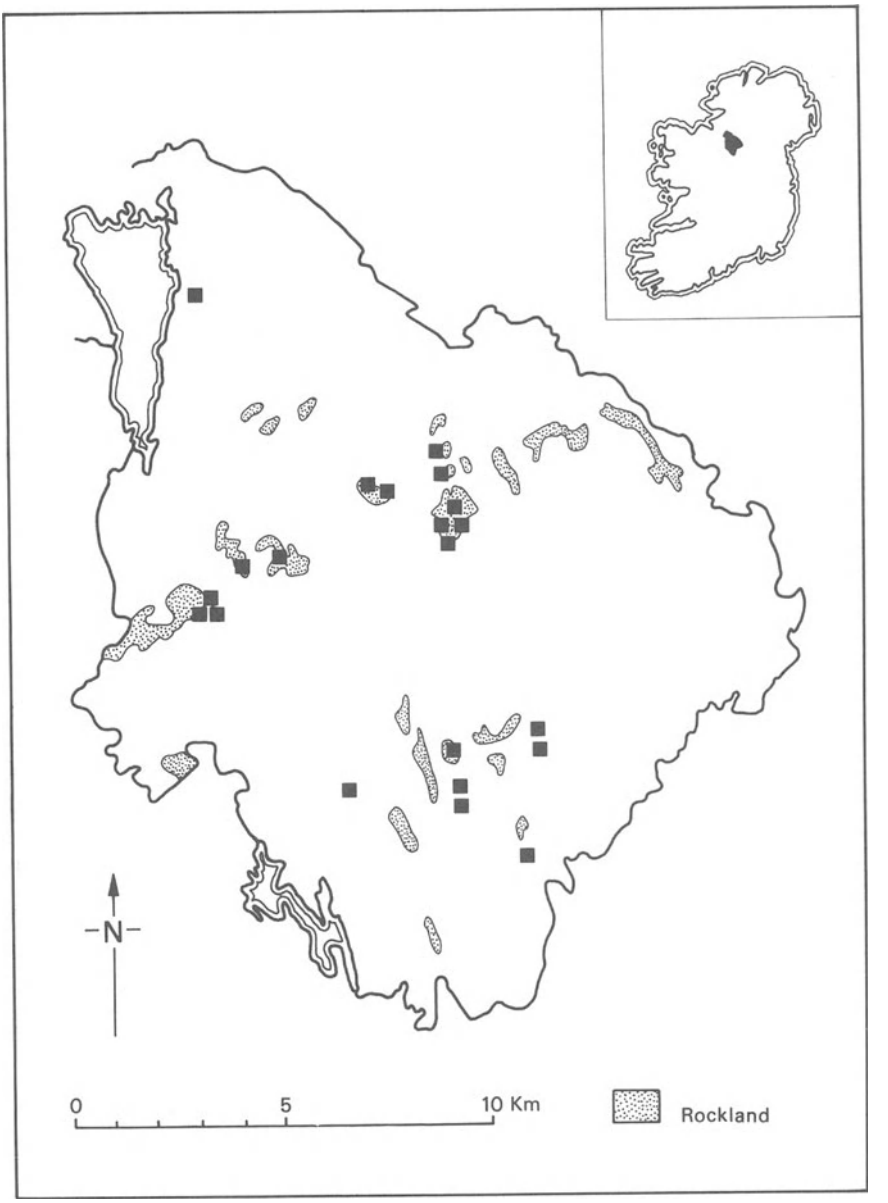

Figure 2. Distribution of megalithic tombs (filled squares) in relation to rockland soils in South Leitrim, Ireland (after Cooney 1983: Figure 3).

and empirical challenges have been made, and can be made, to the basic assumptions of the model. In the sections that follow, I consider questions of generalization, symbolism, and meaning, the subsistence-settlement systems of the megalith builders of western Europe, the concept of territoriality, the archaeological record of megaliths, and the importance of surplus labor for the construction of these monuments.

Generalization, Symbolism, and Meaning

As part of a perceived debate between "processual" and "postprocessual" archaeology, it has been argued that a more context-specific and "internal" approach is required to gain an understanding of megalithic tombs. For example, Hodder has asserted that the territorial approach neglects "the meaning of the tombs, what they signified in a particular historical context," and that "it can never be possible to 'test' the hypothesis, or support the analogy, that the tombs functioned as territorial markers or legitimized rights to resources without also having some hypotheses concerning the meaning of the tombs in the society and time period concerned" (Hodder 1984:53). However, the original publications and subsequent case studies have attempted to use a general model in particular archaeological contexts, as is done in any model-using exercise. It has also been stated explicitly, on more than one occasion, that the territorial model is one that may be used to try and increase our understanding of the archaeological record of which megaliths are a prominent and visible part (e.g., Chapman 1981, 1987a,b). More than one problem may be analyzed using the data of megaliths, and the data can be studied at different scales of analysis. Of course, there are no "laws" of human behavior (outside of Tucson, that is!), but by structuring our observations through general principles we are theoretically informed, and our analysis of particular archaeological contexts helps us to understand the limits of these principles. The archaeological record can, and often will, strike back.

With regard to meaning, I do not understand why we need to know this, nor how it can be determined from the archaeological record. The ethnographic analysis suggests a (not *the*) function for cemeteries and monumental tombs and this can be used as a tool for the study of the archaeological record. Whether the people who built the tombs were cognitively aware of that function, or thought that the tombs were built to stop the sky falling on their heads, is immaterial. Richards's (1992:75–76) recent statement that "when Neolithic people conjured up images of tombs, or approached them with the dead, it is highly unlikely that they would have thought of them as territorial markers or in terms of rights over resources" is similarly irrelevant: when people participate in funerals at the present day, they do not necessarily think of their roles in rites of passage, but this does not make that an inappropriate perspective from which to try and understand the behavior observed.

What we might call the "insider" perspective is also visible in Morris's (1991) recent evaluation of the Saxe/Goldstein hypothesis on data taken from the state societies of Greece and Rome. Morris gives a central role in the understanding of the evolution of human culture to "the beliefs and ideas of prehistoric actors" (1991:147–148), and argues that "we cannot pursue Saxe's hypothesis . . . without first treating it in terms of the actors' own perceptions" (1991:148). Whatever one's reaction to this position, there must be severe doubts as to the ability of an analysis of state societies to inform us about the utility of a hypothesis designed to account for nonstate societies. While it may be the case that the Classical data suggest that "the Saxe/Goldstein hypothesis only 'works' as a description of an ideological structure" (1991:158) this is hardly surprising given the more complex symbolic, behavioral, and ideological structures of state societies. This does not imply that there will be an unambiguous relationship between such structures in nonstate societies (e.g., Hodder 1980), as indeed Goldstein recognizes, and this is why contextual analysis of nonmortuary data is central to the evaluation of the territorial model.

Subsistence-Settlement Systems of the Megalith Builders

On more than one occasion, it has been stated that land, and agricultural land in particular, was the critical resource subject to spatial variability in the territorial model. For example, Julian Thomas (1991:20) has argued recently that "a growth of territorialism resulting from the adoption of agriculture has often been cited as a reason for the first construction of monuments (Chapman 1981; Renfrew 1976)." Agricultural land features in Sherratt's (1990) discussion of northwest European megaliths, while Tilley (1984) counters the territorial model by examining the distribution patterns of Swedish megaliths in relation to arable soils. However, it should be clear to the reader by now that, while agriculture and land were central to Renfrew's model, the same was not the case in my own presentation, which focused on a broader range of resources than these. Indeed, the examples that I chose to illustrate my argument showed something of the variability in subsistence-settlement systems among early megalith builders.

The last decade has seen a renewed debate about the adoption of agriculture within the European continent. Greater contrast is now made between the processes of change in southeast and central Europe, as opposed to northern and western Europe, as stressed, for example, in the substitution model for Atlantic Europe proposed by Marek Zvelebil and Peter Rowley-Conwy (1984, 1986). Whereas change from a hunter-gatherer to an agricultural economy in the former areas was rapid and marked, this does not appear to have been the case within the western and northern areas, where substitution of subsistence resources took place over millennia rather than centuries. Especially notable is the slower rate of adoption of cereals and open village farming, and the emphasis upon animal

exploitation and mobility as the focal points of subsistence-settlement systems. This does not exclude the exploitation of cereals, for which there is archaeological evidence, but it does change our understanding of the context in which early megaliths were constructed. The example cited above from Early Neolithic Denmark makes this point clearly, as does the sequence for Neolithic Britain, with the initial emphasis on "transient hoe-based horticulture," with the exploitation of cereals among a broader range of plant foods, and mobile strategies based on large cattle herds (see Entwistle and Grant 1989; Thomas 1991). For Iberia, I have argued that the full-scale farming economy with open-air villages and year-round sedentism did not emerge in many areas until the later fourth and third millennia B.C., whereas the first cereals and domesticated animals had appeared in the peninsula by the beginning of the fifth millennium (Chapman 1990:221–227). These examples demonstrate that variability in the rates of adoption of agriculture has to be determined through analysis of particular contexts, that full-scale agriculture was more the exception than the rule among early megalith builders (an observation that Sherratt 1990 fails to discuss), and that pasture could have been just as important a resource to these populations as arable land. If territoriality existed, it was not as conceived in Renfrew's original formulation.

The Concept of Territoriality

How do we conceive of territoriality and is the concept useful to us when studying regional patterns in the location and spacing of megalithic tombs? If we look at the way territoriality figured in my model and that of Renfrew, it is clear that it was conceived of in ecological and functional terms (see Peterson 1975): this is the sense in which Dyson-Hudson and Smith (1978:22) defined a territory—as "an area occupied more or less exclusively by an individual or group by means of repulsion through overt defense or some form of communication." Hodder (1984:52) has argued that this approach is not very useful, since, he claims, all human societies and all animal species are territorial, and that all agricultural societies need to control critical resources. I am tempted to reply that such an argument is as justifiable as the assertion that all archaeologists are alcoholics (although I have observed some empirical support for this at the SAA meetings). There is a wide range of variability in the degree to which both humans and animals are territorial, and within individual groups there is variability in the degree to which different resources may be exploited territorially, as Dyson-Hudson and Smith (1978) make perfectly clear. Both Sack (1986) and Ingold (1986) point out that territoriality can be "turned on and off," while Binford's (1983:380) observations on the Nunamiut led him to conclude that they have "no cultural specification of territoriality."

While Hodder's criticism misses the mark, this does not imply that the concept of territoriality used in the study of megalithic tombs is necessarily secure.

A more productive source of criticism is found in the work of Ingold (1986:130–197), who makes a key distinction between the concepts of territoriality and tenure: "territorial behavior is basically a mode of communication, serving to convey information about the location of individuals dispersed in space . . . tenure is a mode of appropriation, by which persons exert claims over resources dispersed in space" (1986:133). In the case of territorial behavior, nature and the resources therein are appropriated collectively, and Ingold conceives of it more as a cooperative exercise than the usual conception of the defense of exclusive access to resources by particular groups. Thus, as he documents from the ethnographic record, "territoriality is a means of effecting cooperation over an extensive but common range in an ecological situation (the exploitation of dispersed fauna and flora) which precludes regular face-to-face contact between cooperating units in the course of extractive activities" (1986:143). In contrast to tenure, territoriality can be "turned on and off in response to circumstances, it presupposes no sense of past and future, no awareness of time, no commitments or intentions" (1986:138). Time and history are vital to tenure. In Ingold's terminology, our discussion of megalithic origins would have to be rephrased in terms of tenure rather than territoriality.

Ingold (1986:147–148) proceeds to distinguish between the geometry of tenure seen in hunter-gatherer and agricultural societies: in the former, tenure is "zero-dimensional" or "one-dimensional" (that is, to do with places, sites, or locations, or with paths and tracks), while in the latter it is two-dimensional (that is, to do with earth or the ground surface). Among hunters and gatherers, specific mythologies may be associated with the tracks and paths that link places. The mobility associated with these kinds of societies, and indeed with pastoralists, takes them along lines to locations and places in the landscape, and it is linked to "the tenure of moveable property instead of things fixed in the terrain" (Ingold 1986:168). With reduced mobility and sedentarization, as well as the transition to full agriculture, "land replaces animals as the material embodiment of the claims and counter-claims that persons exert over one another" (1986:170).

Ingold's discussion of tenure takes on a new meaning when we think back to the changes that have taken place in our understanding of the subsistence-settlement systems of the Neolithic of Atlantic Europe. With the extension of the period of transition from mobile hunting and gathering economies to full, sedentary, farming societies, we can see how the earliest megalith builders straddled different kinds of tenure systems. We may propose that in many (although not necessarily all) areas there was still an emphasis upon movable property rather than land, and that the earliest monuments were constructed at places in the landscape, rather than at the center of defended areas. The monuments become "things fixed in the terrain," to use Ingold's terms (I owe this suggestion to the research of Jan Harding on the British Neolithic). During the time that these monuments were used, or the later, more complex examples were constructed, land was to emerge as the basis of tenure in areas such as southern

Scandinavia and southwestern and southeastern Iberia, although this was by no means a universal feature of the archaeological record of megaliths in western Europe. Mobility continued to exist in subsistence strategies, especially in highland zones (e.g., Bradley 1991), and more than one kind of tenure continued to exist, sometimes in close proximity.

These changes in our conception of territoriality and tenure, when placed alongside our understanding of the subsistence-settlement systems of the early megalith builders, require us to reassess the ways in which the spatial patterning of tombs has been analyzed in the archaeological record.

THE ARCHAEOLOGICAL RECORD OF MEGALITHS AND ITS STUDY

Renfrew's (1973:146) application of the territorial model to analyze the spatial distribution of megalithic tombs on the islands of Arran and Rousay was based on the assumptions that "few if any have been destroyed" and that "in studying them, we may get as close an approximation to the original settlement pattern as we are likely to find anywhere." The use of Thiessen polygons enabled him to define a regular, rather than clustered, distribution of social units, each centered on what were supposed to "simultaneously functioning tombs." Such assumptions and methods were also employed on an even broader scale to the megalithic tombs of Ireland by Darvill (1979). The observation that megalithic tombs survive better, or are more visible in the archaeological record, than their associated settlements has encouraged such attempts to analyze their spatial distributions to reconstruct surrogate settlement and social systems. But how likely is it that a representative pattern of "simultaneously functioning sites" will have survived postdepositional processes in other areas of western Europe outside of Arran and Rousay?

Two of the most detailed studies of the preservation and discovery of megalithic tombs come from the Channel Islands and from the islands of Orkney. For the Channel Islands, Hibbs (1986) has studied the historical evidence for tombs have been destroyed, and the human activities that have caused their destruction. For example, on the island of Jersey, there are 32 megaliths recorded at the present day, but some 40–50 sites were destroyed in the period ca. A.D. 1682–1800, while on the neighboring island of Guernsey, where 27 tombs are known, 68 additional tombs are represented by the evidence of place-names. The main causes of destruction were medieval and modern agriculture (although some sites were preserved in field boundaries) and quarrying (the use of megaliths as a source of building materials). The mainly coastal process of sand deposition has had the effect of preserving tombs from destruction (e.g., Les Fouaillages; Kinnes 1982). It has been argued that the best preservation of tombs occurs in areas that have not been subjected to agricultural exploitation, and that 5000 years ago such tombs were more evenly distributed across the island. Areas that contain larger

proportions of wasteland, or less constrained space, such as the Breton mainland, have been argued to possess a more representative sample of tombs.

Fraser (1983) analyzed the effects of modern fieldwork in creating the published archaeological record of megalithic tombs on the islands of Orkney to the north of Scotland. In 1935, Gordon Childe recorded the existence of c. 250 tombs in Scotland, including 21 in Orkney, but at the present day this figure has increased to over 600 tombs, of which 76 are now known in Orkney. Fraser argues that it is possible to estimate the degree to which the known tombs approach the total number of such tombs that may be preserved and awaiting discovery by the archaeologist. For any class of archaeological data, Fraser proposes that we might expect a pattern of discovery like that plotted in his "growth curve of recognition" (Figure 3, left): in period 1, few sites are known and the rate of discovery is low, while in period 2, there is a marked increase in the numbers of sites and their discovery rates, and in period 3, sites become more difficult to find and there may be fewer sites as a whole to find with the field methods that are in use. How does the pattern of discovery for megalithic tombs in Orkney correspond to this model curve? Figure 3, right, shows that the discovery rate for Orkney is still that of Fraser's period 2, and that, consequently, there must be more sites still to be discovered before the curve levels off in period 3. A major contribution to the concealment of tombs from the archaeologist is the peat that has grown over large areas of Orkney since the Neolithic (Fraser 1983; Figure 2.4.). As has been seen in other parts of the British Isles, peat growth can cover both megalithic tombs and Neolithic field boundaries. In the Fenlands of East Anglia, Neolithic long barrows and Bronze Age barrow cemeteries have been sealed completely below peat and are only now being exposed for study by the drainage of the peat.

Thus, assessment of such postdepositional processes is an essential prerequisite to spatial analysis of tombs. The use of historical records of tomb destruction, as well as modern "recognition curves" of the discovery rates of archaeological sites, suggests that more marginal and/or less pressurized areas will have more representative samples. Also, it is the largest, or more substantially constructed, tombs involving increased labor inputs and, by normal inference, the greater importance for regional polities that survive best. Mercer (1992) has pointed out the ability of some megalithic tombs in Caithness and Orkney to survive encroaching cultivation during the last 150 years.

The recognition of spatial patterning does, of course, depend in part on the scale of the analysis. The definition of spacing, rather than clustering, among megalithic tombs on the islands of Arran and Rousay was essential to Renfrew's model of a segmentary society, with its cellular and modular structure. But, as has been observed recently (Hughes 1988), when one "stands back" and views the tomb distribution in the context of the mainland of the Firth of Clyde surrounding Arran, the pattern appears markedly clustered (Figure 4). It is also worth pointing out that Renfrew's case studies and his ethnographic analogies were all based on island communities, and it has yet to be discussed how far the processes of change

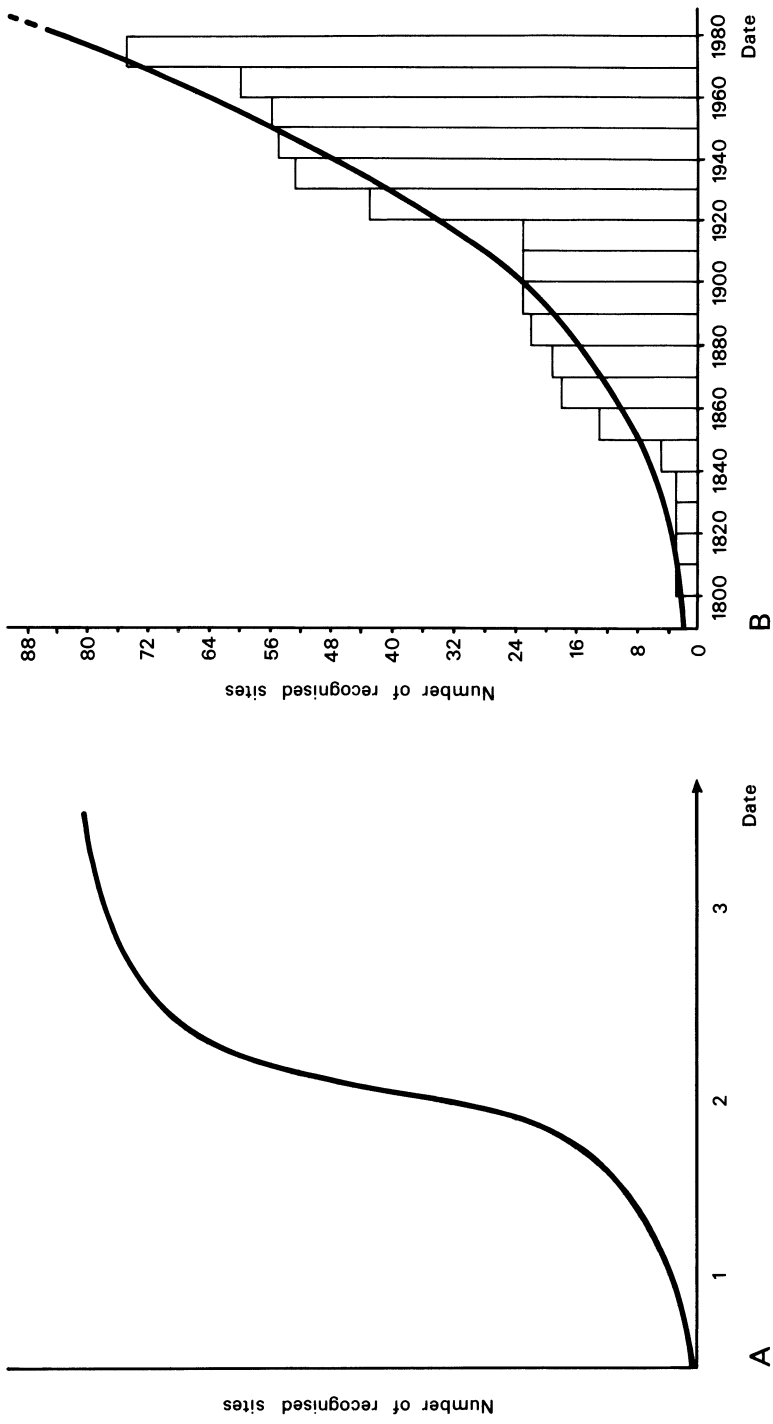

Figure 3. A. Growth curve of recognition of archaeological sites (after Fraser 1983: Figure 11.4). B. Growth curve of recognition of chambered tombs on Orkney (after Fraser 1983: Figure 11.6).

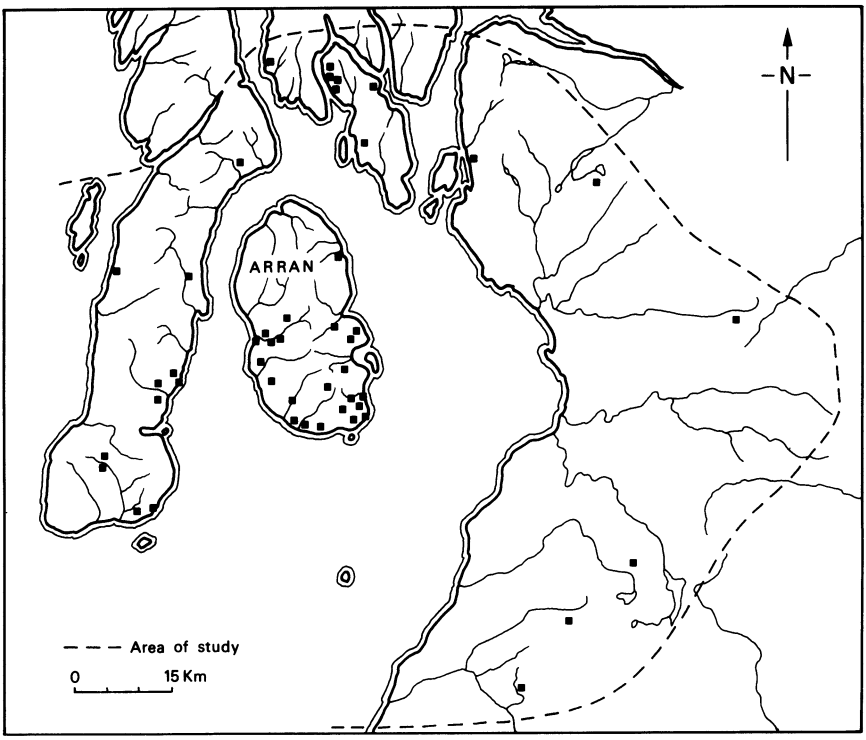

Figure 4. Distribution of megalithic tombs (filled squares) in the Firth of Clyde (after Hughes 1988: Figure 1).

among insular farming communities, including their settlement patterns, demographic trends, and economic organization, differed from those experienced among contemporary mainland groups in Neolithic Europe (e.g., for Polynesian chiefdoms, territorial units, and monumental tombs, see Kirch 1990).

Thus there are grounds for arguing that the conditions that might allow a delimitation of territories between "simultaneously functioning sites" are by no means universal in the archaeological record of Europe. It is an assumption in need of evaluation that tomb distributions are surrogate settlement distributions (see Whittle 1987:36). Indeed, Renfrew (1981:75–77) recognized this in his later discussion of the spatial relationships between settlement patterns and burial locations. It is also an assumption that tombs, as containers for the ancestors, will have been located adjacent to settlements and at the centers of territories. Thus, for example, when Perry and Davidson (1987) observe the increased importance through time of arable land in tomb location on Arran, this could be indicative of an increased emphasis on cereal cultivation, or it could reflect the location of

tombs more toward the center of community territories. Kalb's (1981) maps of the distributions of groups of southern Portuguese megaliths show different relationships to soil quality, but in areas such as Montargil, where the tombs are located almost entirely on soils of the poorest quality, the majority are still within 1 km of the best soils. In northwestern Spain, the tombs of the Sierra de Barbanza are located in areas of present-day pasture, but immediately adjacent to dispersed areas of cultivable land (Criado, Aira Rodriguez, and Díaz-Fierros Viqueira 1986). Finally, analysis of the spatial distributions of Early Neolithic burial mounds and surface flint scatters in the Peak District of north Derbyshire (Bradley and Hart 1983) supports the inference that the dead were located in areas that were peripheral to the settlements of the living. Clearly, the spatial patterning of tombs and settlement foci is a topic for determination within the limitations posed by our understanding of the archaeological record. The model scenario of equally sized modular units centered upon megalithic tombs and bounded by Thiessen polygons may be a more restricted case in the archaeological record. Indeed, in the light of the earlier discussions about tenure and subsistence-settlement systems, the concept of such units occupying discrete areas of space is more applicable to later tombs, constructed by full-scale farming communities, than it is to the earliest megaliths.

LAND, LABOR, AND COMPETITION

If we view the subsistence-settlement systems of the early megalith builders in the light of Ingold's discussion of tenure and the transition to fully agricultural societies (see above), then there are grounds for taking up Hodder's (1984) criticism that land was not a critical resource at this time. Even within the village farming Neolithic societies of central Europe, there is now greater stress on the unpredictability of early cereal cultivation, particularly as these cereals were taken further to the north, and away from their natural habitats. In such societies, labor has been argued, in recent publications by Bogucki (1988) and Gregg (1988), to have been the major constraining factor on agricultural production. Such an argument is based on the demands and risks of early cultivation, and on calculations of the availability of land in relation to the best current estimates of population density. Such estimates are, of course, open to debate, in the light of variability in the archaeological record, and it could be argued that it is the availability of cleared cultivable land or initially natural pasture as a resource that should be compared with population estimates, but for the moment let us pursue the use of labor in relation to mortuary practices.

Within the early farming communities of central Europe, the disposal of the dead in cemeteries began to occur, and has been argued to show the use of the ancestors to symbolize claims to resources. To the north and northwest, the construction of monumental tombs using stone, earth, and timber was taken, in

my 1981 paper, as a similar expression, but what was missing was an understanding of their implications for the manipulation of labor. While monumental tombs can be regarded as formal disposal areas, to do so exclusively is to disregard their differences from flat cemeteries. In other words, we miss out on their specificity. Monuments have the potential to communicate information to a wider audience in a more impressive way. In many cases, clear visual signals are given off at some distance. They can also be manipulated and appropriated by groups within society. Their incremental nature (Quilter 1991) is seen in the changes to their size and form through time. Monuments may be maintained, altered, or even superimposed by other kinds of monuments (for examples of superimposition in Neolithic Britain, see Bradley and Chapman 1986). All this requires the organization of surplus labor for nonutilitarian purposes (Trigger 1990). Given the labor requirements for even the smallest tombs (e.g., Barber 1992, for some recent estimates for the Orkney islands), and their implications for communal participation, it is clear that the commitment to monument construction increased the demands on the total energy budget within these societies. In some areas the energy consumption increases through time, as, for example, in Denmark with the utilization of stone as opposed to mainly timber and earth constructions. Furthermore, the initial use of such monuments is reserved for only small segments of the population, as has been calculated for regions such as Denmark, the British Isles, and Poland. Evidence for the existence of vertical status differences within the preceding Mesolithic foragers in northwest Europe has been deduced from analysis of their mortuary data, so the use of surplus labor to construct tombs for a minority would, at the very least, represent greater emphasis upon existing differences.

Variability in the use of surplus labor is observable from differences in the energy budgets devoted to megalithic tombs in different regions of northwest and western Europe. In some cases the scale of the monuments supports the inference of the use of large-scale labor derived from a regionally based polity (e.g., the Boyne valley in Ireland, Brittany). Of course, once there is the basis for the use of surplus labor for the benefit of the few, then this has implications for the exercise of power. Indeed, the increase in labor investment through time, or the comparatively short periods of such investment within whole regions (e.g., eastern Holland, Denmark), is also suggestive of more competitive social strategies. The relationship between the conspicuous consumption embodied in megalith construction and intergroup competition has been discussed for the cases of Neolithic Ireland by Sheridan (1986) and for southwest Sweden by Sjogren (1986). Ritual is seen as playing an important role in social control.

DISCUSSION

The territorial model was designed to help us understand the construction of west European megalithic tombs in the context of subsistence-settlement systems,

demographic and social processes, and the invocation of the ancestors as a key element in social strategies. It was the context of the mortuary practices that was deemed to be important if we were to present a viable alternative to diffusionism. Given that we cannot know what was in the minds of the megalith builders, the use of specific models to structure analysis of the archaeological record seemed the best way forward. It was always clear that variability existed in that record, both in time and space, and that different models and analyses were appropriate at different scales of that record. Thus, for example, it was never claimed that the territorial model was sufficient to understand monument manipulation and appropriation, or the internal organization of the tombs, the structured deposition of human bones, or the specific locations of mural art (e.g., Bradley 1989; Richards 1992; Thomas 1991). The model, as an heuristic device, enabled us to examine the spatial distributions of megaliths, and their cultural contexts, in a new way. It depended on specific assumptions and relationships between variables, which, if not met, would lead to the revision of the model.

In this chapter, the critical appraisal of the territorial model has four key elements.

1. Changes in our understanding of the subsistence-settlement systems of the early megalith builders have taken place in the last decade. Emphasis is now being placed upon more extensive systems with later adoption of full-scale village farming in Atlantic Europe. In this context, arable land is only one resource that may be critical (i.e., restricted in distribution or amount) for local populations.
2. Given this different reconstruction of subsistence-settlement systems, and Ingold's clarification of the concepts of territoriality and tenure, the earliest megaliths were constructed during a period of transition in the appropriation of nature. The monuments were places in the landscape and not necessarily the centers of defended areas, even though their usage was associated with particular groups. There is no reason why the rates of change in tenure systems should have been the same in different parts of Atlantic Europe.
3. We cannot assume that existing distributions of megaliths are surrogate settlement distributions, and we must recognize the variable relationship between tomb and settlement locations. Our first task is to understand the formation of the archaeological record of megaliths in our individual areas of study.
4. Megalithic tombs and other such monuments are more than just formal disposal areas. They possess the potential for communication, manipulation, and appropriation by groups within society who can organize the use of surplus labor for nonutilitarian purposes. Not all groups "maximize" this potential, as can be seen by differences of energy expenditure involved in the construction of megaliths through time. Within different

areas of Atlantic Europe, such surplus labor was invested in either domestic or ritual contexts, or in both.

Taken together, these critical points give us a rather different conception of the contexts in which megalithic tombs were first constructed in Atlantic Europe, and of the spatial patterning of these monuments in the regional landscape. The division of the known Neolithic landscape into exclusive territories with centrally located tombs is only one of a range of spatial patterns, and makes assumptions about subsistence-settlement strategies and patterns of tenure that do not appear to be supported empirically or theoretically for the earliest megaliths. To identify these tombs as formal disposal areas, used by corporate groups with lineal ties to the ancestors, is only a very small, initial step in the process of trying to understand their variability in time and space. Also, the use I made of Saxe's Hypothesis 8 focused only on the similarities shared between megaliths and cemeteries, rather than their striking differences. Today I am more impressed by those differences, and by the need to understand the dynamics of change in monument size and morphology, and consequently the dynamics of change in the societies that constructed the monuments. Lineal ties to the ancestors were important in the lives of Neolithic societies in Atlantic Europe, and the tombs of these ancestors were key "reference points" in cultural landscapes. Using concepts such as territoriality and formal disposal areas did, I think, point us in the right theoretical direction, and led to research that highlighted relationships between different categories of archaeological data, but our thinking was often too static. Like other branches of the archaeological analysis of mortuary practices, much of the initial impetus for this approach came from the ethnographic record, but the key to developing our knowledge of the past can only come from understanding the archaeological record.

Acknowledgments

I would like to express my gratitude to the British Academy and the University of Reading for enabling me to attend and enjoy the remarkable cultural experience of the SAA meetings in New Orleans! Thanks are also due to Lane Beck for inviting me to participate in the symposium, for making me welcome in Boston before the meetings, and for nudging me ever closer to the submission of the final version of this chapter.

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Chapter 3

Mortuary Behavior, Labor Organization, and Social Rank

KATHRYN MAURER TRINKAUS

INTRODUCTION

Mortuary analysis has a long and erratic history in archaeology. Studies of skeletal remains were first motivated by a desire for information on racial affiliation and population movement, while the associated grave goods seemed to offer detailed chronological ordering of artifact types. Much enthusiastic and unsystematic excavation also centered on monuments or site complexes with large quantities of mortuary remains. While archaeological interest has turned away from constructions of sequences and reconstruction of racial types, these complex sites and their archaeological materials, testifying to organized human activity on a large scale, have become key sources of information on broad patterns of social change. Mortuary remains, too, are often highly patterned and are differently so in societies of differing organization, seeming to inform us of social dimensions not readily visible in other archaeological materials. Consequently, we have a current problem (the understanding of social dimensions of nonliterate, prehistoric societies) and a

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large body of patterned material. The temptation to put two and two together is irresistible.

MORTUARY RITUAL AND SOCIAL INFERENCE

Social roles filled by the living reflect the structure of their societies and affect the rituals carried out after their deaths, rituals that create the physical remains of burial. Mortuary patterning is therefore evidence of a sort for the level of internal differentiation in prestate societies (Binford 1971; Brown 1971; Saxe 1970; 1971). The main question seems to be of what sort (Hoyle 1990; Paynter 1989). Within an essentially evolutionary framework mortuary analysis was refined first into an investigation of the relation between subsistence, decision making, and control of socially valued goods (Braun 1979a,b, 1981a,b; Brown 1981; Goldstein 1980; Tainter 1978, 1980) and, more recently, into consideration of the organization and differentiation of labor (Graves 1986), especially in ranked societies (Pearson, Lee, Koh and Underhill 1989). Ritual remains also reflect the exercise of power and status maintenance activities (S. E. Shennan 1975), social groups, territories and spheres of exchange (Chapman 1981; Chapman, Kinnes, and Randsborg 1981), and the competition of kin-based territorial units for land and labor (Hodder 1982a, 1984; Oliviera 1986; Shanks and Tilley 1982; S. J. Shennan 1982; Sjogren 1986), with the emphasis on short-term historical process (Bartel 1982; Cannon 1989; Humphries and King 1981; Parker-Pearson 1982; Trinkaus 1984) or long-term prehistoric reconstruction (Bradley 1988, 1989; Hodder 1990).

Most serious criticism has been aimed at the extraordinary range of variation in mortuary patterning, the lack of secure links between archaeological manifestations and the spatial and chronological limits of postulated prehistoric social groups, and the difficulty of detecting ideological distortion of social distinctions (Alekshin 1983; Braun and Plog 1982; O'Shea 1981, 1984; Shanks and Tilley 1982). Furthermore, evidence may be destroyed (as in cremation or exposure rituals; Brown 1979), and certain ranks or statuses may be differentially affected. Differential treatment of social deviants may confuse the picture, especially if rarity is considered an indicator of possible high rank (Shay 1985). Rank may be expressed in nonmaterial ritual, especially if material expression is inverted so that high status in life correlates with simplicity in death (Bartel 1982; Cannon 1989). Rank may be expressed in only one of several loci (e.g., grave furnishings or superstructures, internal spatial arrangements, locus of grave in relation to other graves, settlements, or sacred places) that can be difficult to identify even in ethnoarchaeological context (Fjellström 1983), though statistical analysis may be capable of extracting patterning from all of these in purely archaeological context (O'Shea 1985).

The role of architectural features is particularly controversial, since these may reflect the size and structure of corporate kin groups at the time of construction (Graves 1986) but be used over long periods for varied purposes by differently organized social groups (Giot 1983; Joussaume 1985; Sjogren 1986). The expression of status may vary in specificity or in standardization, as well as between subgroups within the same status-structured power system (Parker-Pearson 1982; Trinkaus 1984). It also may vary in the activity associated with appropriate expression, so that at one moment burial may be the principal vehicle, while at another time some other form of ritual may take precedence (e.g., group consumption or ritual "killing" in sacred hoards). Nonetheless, these qualifications apply to the manner in which status is reflected in mortuary ritual, rather than to the fundamental principle that social ritual reflects social personae (Brown 1981).

Mortuary data need not do the whole job of documenting social structure, since patterning suggestive of social differentiation pervades much of the archaeological record. Inference from several kinds of data is essential. The result is inevitably an equally complex argument, however, and several insecurely related chains of inference are not better than one. Improving the use of mortuary indicators and other status-related measures is therefore essential to reducing the cumulative improbability of complex arguments.

IDENTIFICATION OF SOCIAL INEQUALITY

Since the value of a complex argument rests on the relevance of each chain of inference to the phenomenon being studied, how do we establish the relevance of patterning in ritual and nonritual data sets to social rank? Rank is a structure of social inequality. Material resources and labor are concentrated and differentially used, and participation in and reward from these processes are unevenly distributed. This, in turn, depends on the allocation of labor in production and distribution in general. Interest has centered on rare materials acquisition, production of social goods, and valuation of these goods and their distribution, especially in ritual context (e.g., Chapman 1982; Kristiansen 1981; Renfrew 1975). Such evidence also is reinforced by any indication of a structure of inequality in mobilization of labor for nonritual purposes, since this provides the enforceable basis of inequality. From this point of view, exchange and use of social goods are indicators of increasing social complexity, and only secondarily its causes.

Although rank unquestionably existed, identifying it archaeologically is more difficult (Earle 1989). Attempts to define a "chiefdom" in the abstract (Fried 1967; Haas 1982) provide only general guidelines, while differing views of the degree of complexity of recent societies (Earle 1978; Sahlins 1958) suggest that archaeological data may provide little basis for drawing fine distinctions. Furthermore, it has

been argued that material symbols of hereditary authority not only evolve rapidly but are characteristic of unstable systems of social rank (Davis 1985). Archaeologists are more likely to identify pervasive and durable forms of inequality, so that arguments concerning the early development of ephemeral inequalities or the inference of ranking will be inconclusive to the extent that these rest on the patterning in ritual sites or paraphernalia and lack more extensive indications of labor inequality.

Examining labor organization also avoids literal interpretation of substantivist-formalist identification of surpluses and profits. The significant difference between these points of view is not so much that surpluses and profits exist or do not exist, but whether they are dispersed among many people or concentrated and mobilized to serve centralized goals. If dispersed, their role in reinforcing social differentiation is limited. The same is true in considering the role of exchange. The social consequences of exchange are a result of the manner in which labor and materials are used, the restriction of access to critical resources, the exercise of highly developed skills by segments of a society, the extent of specialization and standardization of production, and the efficiency of production, rather than of the absolute quantities of labor used or goods produced (Torrence 1986:82–90). What we need, then, is information on the changing distribution of labor across both ritual and nonritual tasks relative to the demands of local consumption, evidence of a pervasive unequal structure of labor allocation.

SOCIAL INEQUALITY AND MORTUARY RITUAL

In the absence of evidence for the enforceable basis of inequality, interpretation of mortuary patterning frequently is part of an assumed context in which to understand the observed pattern. For example, a study of burials in early Iron Age Cyprus concludes, on the one hand, that egalitarian burial and a corresponding lack of personal status differentiation characterize the samples (Rupp 1985). On the other hand, group self-definition is assumed, as is participation in rather complex structures of materials acquisition, transformation, and distribution. In Iron Age context this combination of features passes without comment. In Neolithic context, however, the presence of ethnic identity, exchange networks, and specialization in production of social goods would seem unlikely without some form of status differentiation.

Another example can be found in the debate concerning the lack of marked status differentiation among burials from Grasshopper ruin versus those from the Chavez Pass site (F. Plog 1985; Reid 1985; Upham 1985; Upham and F. Plog 1986). The point at issue is not so much the burials themselves as the broad discrepancy between contexts of interpretation, one accepting a minimal level of status differentiation and one seeing a much higher level (Cordell 1984, 1985).

I have argued elsewhere (Trinkaus 1987) that similarly contrasting contexts for inference from material patterning are found in panresidential concepts of regional organization versus more formalized structures of critical resource control ("alliances") in North America (F. Plog 1983; Braun and S. Plog 1982), as well as in the overt versus masked rank views of several parts of Europe, including south and west Sweden, north Poland and north Holland (Shanks and Tilley 1982; Sjogren 1986; Tilley 1984; Voss 1987; Weber and Piontek 1985), Wessex (Braithwaite 1984; Renfrew 1976, 1981), the Netherlands, and France (Renfrew 1981, 1984; Hodder 1982a, 1984). By overt rank I refer to those arguments that postulate the emergence of social rank with the archaeological presence of ritual (including mortuary) indicators, generally not before the later Neolithic. By masked rank, I refer to the view that significant social inequalities gave rise to potentially destructive internal tensions at an earlier date. These were neutralized for some time by masking actual social relations with an appearance of egalitarianism in ritual. In this view, mortuary data give deliberately misleading indications of a lack of social differentiation.

OVERT VERSUS MASKED RANK IN NEOLITHIC EUROPE

Between about 5500 and 2000 B.C. in western Europe the archaeological record hints at formation of social strata, and at specialization and diversification of some activities and roles. With respect to the domestic economy, the role of intensive collecting in relation to the labor demands of a slowly expanding agricultural economy is unclear. Nonetheless, some ceramic styles were widespread from an early date. The profusion of roughly similar types suggests that information transfer and imitation take precedence over object exchange and that information transfer was changing rather rapidly. This coincides with an apparently less flexible pattern of residence and a 75–80% dependence on domestic stock (Poulain 1976; Scarre 1985); there is little evidence of more intensive labor investment in agriculture, however. Some exchange of exotic raw materials and large-scale production and exchange of metamorphic rock axe blanks are present. A similarly organized production and exchange of long blades of particularly high quality flint has been postulated.

Settlement patterns are generally poorly known, but some areas have larger, more numerous, and more clearly differentiated sites, suggesting intensified labor expenditure and greater social interaction on a periodic basis. Megalithic monuments were constructed and used, especially from the Brittany peninsula to the Bordeaux region. The period of use of the monuments is considerably longer than that of active construction, extending over some 3,000 years, and coinciding with the transition to full dependence on domesticated food sources and less flexible, more sedentary residence.

Large communal or elaborate individual funerary deposits define systematic differences between burials in single sites or regions, although there is great variation in the deposition of bodies and objects (Giot 1983; Joussaume 1985; LeMort 1983); some were communal tombs but there is no clear trend toward increasing exclusivity of burial within a megalith. These monuments for the dead were evolving social contexts.

Both burials and sites sometimes include objects that may be badges or tokens of status, such as decorated ceramic objects (e.g., the enigmatic Chasséen "potstands" or "incense burners") of standardized pattern. These imply internal maintenance of emerging status differences, often attributed to labor coordinating and decision-making stresses.

The pattern of labor organization that this implies is only now receiving detailed study. With respect to the monuments, both long- and short-term coordination of large quantities of labor and considerable skill in shaping, decorating, and assembling the blocks were needed. For example, experiments demonstrate that the most labor-intensive acts (such as raising several-ton capstones) can be accomplished in a day by about 300 people using poles, levers, and ropes (Mohen 1984). Further excavation has established that many of the major monuments were originally covered with tumuli, requiring a smaller input of labor over a longer period. Some of these have very distinct phases of construction without major changes of plan, such as the large structure of Barnenez (L'Helgouach in Giot and Monnier 1979:161–164). This was built in two sections, separated by about 300 years. Others, such as Bougon, are part of complexes of mounds, ditches, and banks, demarcating space in highly patterned fashion that changes in plan through time (Mohen 1984, 1989). Some object and monument styles are widespread (Bradley 1989), while others become increasingly restricted in scope.

The principal archaeological consequence is a partitioning of the prehistoric landscape into many new and smaller divisions, with an expansion in geographic distribution of some objects, activities, and styles, part of the well-known Neolithic "regionalism."

Thus, these have been thought of as small-scale, kin-based power structures controlling land and the investment of communal labor in ritual display. Some megalithic monuments may have served as meeting places and group territory markers. Some directed, nonsubsistence production for prestige goods exchange has been seen as a basis for maintenance of group cohesion, validation of unstable power inequalities, and regular interaction between similar composite social units. This is not an equilibrium, but an unstable social framework needing only the addition of enforceable authority to be on the road to permanent inequality. There are hints of this trend by the end of the Mesolithic and asymmetries of power probably became more marked toward the end of the Neolithic. Prior to the Late Neolithic, no great inequality of status is evident (Giot et al. 1979; Guilaine 1980;

Renfrew 1976, 1981; but compare Sjogren 1986). A durable form of social inequality was established by the middle of the Bronze Age. Its development between these two points may have been uneven in fact, in expression, or both (Kristiansen 1982; Tilley 1984). The general consensus seems to be that there are no major regressions, only periodic shifts in the pace of change (Whittle 1985, 1988). The principal dissent, therefore, arises in tracing the development of social inequality through the Neolithic, with the overt rank view placing this in the Late Neolithic and the masked rank view arguing for the Middle Neolithic.

Some of these data have also been construed as evidence of a well-established inequality by the Middle Neolithic (Hodder 1982a, 1984, 1990; Shanks and Tilley 1982; Tilley 1984). This argument revolves around the relation between lineage structure, competition over scarce resources, and the manipulation of decorated artifacts to define cooperative and competitive boundaries within societies. In this view, the spread of agriculture and stock rearing took place under conditions of labor shortage rather than land shortage. This placed a premium on recruitment of women as producers of offspring and encouraged manipulation of decorated domestic artifacts to reinforce solidarity of the lineage-based, domestic productive unit. As the limit of readily cultivable land was reached, density of settlement increased, with a spreading out into less easily cultivated zones. Shortage of land superseded shortage of labor and the domestic unit of production was dominated by the larger kin unit controlling land. This shift in the balance of power created conflicts of interest that were masked, for example, through communal burial rites and matching house forms with communal tombs, particularly in parts of Holland and northern France. As production and distribution became increasingly centralized, household objects, such as ceramics, were workshop made and undecorated, signaling a decline in the domestic item-symbolizing characteristic of previous periods. Thus, utilitarian artifact classes directly reflect centralized control of production, while communal burials are an inverted indicator of growing status differentiation, used to mask already well-established asymmetries of power through the Neolithic.

Despite nearly 10 years of intensive use, it is worth remembering that this model arises from ethnographic studies of mobile peoples at low population densities (Hodder 1982b); its relevance to more sedentary groups said to be solving problems of intense daily interaction is unclear. Its relevance to some ritual behaviors in recent industrial societies has been cogently argued (Cannon 1989; Parker-Pearson 1982) but its usefulness in long-term prehistoric perspective is a well-worn but poorly examined assumption. Furthermore, labor is usually a limited quantity where statuses are differentiated. Arguments that see the emergence of rank as a form of social control over labor as a consequence of labor shortage are therefore based on a relative change difficult to define and measure even in contemporary societies (Hodder 1984; Miller and Tilley 1984). The interpretation of artifact design patterning as social communication is also open to

question. The expectation that a decline in decoration follows a decline in intragroup membership signaling and a shift to workshop production of undecorated objects does not fit well with at least one of the pottery complexes of the Middle Neolithic. This, the Chasséen, is partly undecorated but includes items (the "pot stands" or "incense burners" mentioned earlier) decorated in a stylized, repetitive manner suited to iconographic signaling. These are even found frequently in mortuary context, although a large part of all known archaeological contexts for this period are mortuary sites rather than settlements. If ceramics did function as a kind of badge of membership, this pottery may well testify to exactly such activity.

Otherwise, the mortuary evidence from the Middle Neolithic (and from the Neolithic is general) does not reflect great elaboration of social rank, as both overt and masked rank arguments recognize. They draw opposing inferences concerning social rank due to their varying theoretical expectations of overt expression of rank in the first case and of masking behavior in the second. Examination of further mortuary data will not resolve the issue. It is argued here, however, that significant social tensions cannot be masked equally in all realms of activity. In particular, there should be evidence of their enforceable basis (e.g., of labor concentration in artifact production and distribution), if there were substantial inequalities to be masked.

LABOR ORGANIZATION AND LITHIC PRODUCTION

Evidence of labor concentration is not readily available for most artifact classes, especially to test inferences on this scale. Some evidence regarding lithic production can be found, however. If labor was concentrated in the production of these utilitarian objects, then we should find exploitation of workshop sites, at least for the initial stages of reduction. We should find, therefore, either a spatial separation of reduction and use, or at least some evidence of separation of initial reduction and secondary trimming/use. We may also expect some degree of organized control over exploitation and distribution of stone materials from particularly high-quality sources. There should be a significant presence of these materials or, minimally, a diversification of the range of materials attributable to an increase in quantities of finer materials. This is not sufficient by itself, however, since we may also expect that this availability was not unrestricted with respect to the raw material but that a partially processed form requiring a high level of skill (such as blanks or long blades) circulated (see, e.g., Torrence 1986:44–48, 85–90). Furthermore, if there was no major regression following the frenzy of Middle Neolithic masking behavior and if the postulated level of inequality was present by the Middle Neolithic, some trace of its basis should be clearly visible by the Late Neolithic.

LITHIC PRODUCTION IN LATE NEOLITHIC WESTERN FRANCE

The notion that there existed some form of centralized control over production and distribution of some lithic resources incorporates two well-known features of the archaeological record of the Late Neolithic in western France: preferential exploitation of some lithic workshop sites and "commerce" in metamorphic axe blanks and long blades (LeRoux 1975; Saint Venant 1910). Both of these are a direct result of the nature of lithic sources. This region is largely composed of limestones that are rich sources of flint of two kinds: large nodules or tabular pieces found in surface clay deposits—the remains of in situ weathering of the original limestones—and veins of nodules (usually much smaller) that are exposed mainly along rivers. Flint is abundant, though of varying quality and usable piece size. Metamorphic rocks are locally rare, however. To the north in Brittany and to the east in the Massif Central the situation is reversed; flints are less common, especially in Brittany, but metamorphic rocks suited to axe production are to be found. Since metamorphic rocks are readily characterized, the production and movement of axe blanks is well documented (e.g., Giot 1952, Giot and Cogne 1955, LeRoux and Giot 1965; LeRoux 1971; Roussot-Larroque 1983), while the production and movement of flint is more difficult to trace. The area of Le Grand Pressigny is very productive of fine, tabular flint, large cores, and long blades. The last were probably widely distributed at this time (Cauvin 1961, and see, e.g., Lanting and van der Waals 1976; Roussot-Larroque 1983, 1984). Definitive characterization studies have yet to be carried out. Most attributions rest on visual identification, although the flint of Le Grand Pressigny is quite variable in appearance (Cordier 1957).

The data on lithic production and discard presented here are taken from lithic assemblages of three sites spanning the later Neolithic in Charente and Charente-Maritime (Figure 1). The sequence for the later Neolithic (including both the Late Neolithic and that awkward interstice called Terminal Neolithic or Chalcolithic) in the center west has been studied in depth (Burnez 1976; Gomez de Soto 1980: 27–32) and the chronological placement of the three sites is well, if not perfectly, understood. Semussac (Mohen and Bergougnan 1984), Biard (Burnez 1957; Burnez and Facon 1957) and the Fort des Anglais (Gomez de Soto 1983) are located in a region rich in megalithic monuments. All are ditched and walled (*camp à fossé* or *éperon barré*) and located on high ground. All have little evidence of occupation except for the debris in and adjacent to the ditches, so that their identification as settlements is uncertain. That debris contains the full range of ceramic types and faunal remains characteristic of the period, however, as well as a broad range of lithic implements and varying quantities of primary and secondary debitage. If not settlements, these sites are the Neolithic equivalent of long-term, centralized, sanitary landfills. Their deposits can be regarded as containing a reasonably unspecialized cross section of occupational debris, redeposited in

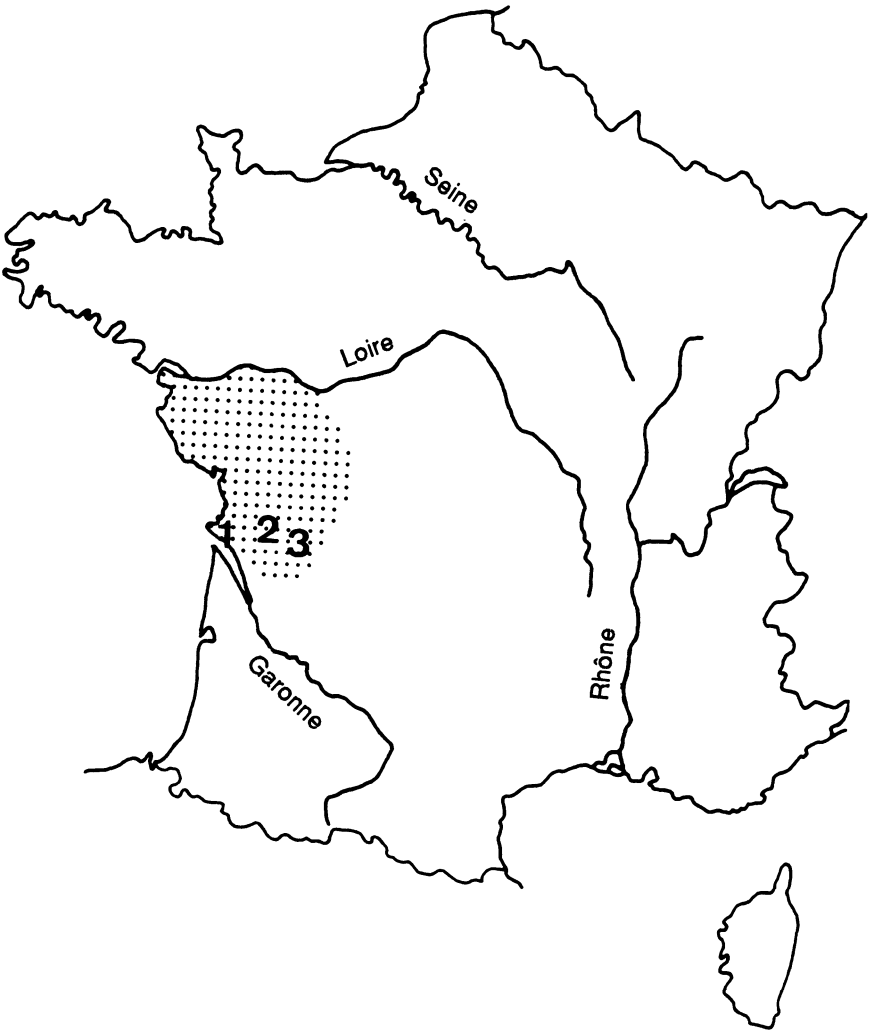

Figure 1. Map of France showing the location of three sites in the center-west portion. 1, Le camp de chez Reine à Semussac; 2, Le terrier de Biard; 3, Le Fort des Anglais.

(at best) secondary context. The data derived from this context are informative about the site as a whole and cannot be subdivided to give information about individual households or other smaller units.

Semussac is located near the mouth of the Gironde estuary, Biard on an old course of the Charente River, and the Fort des Anglais above a spring further inland. Near the coast, nodular flints are generally smaller and have a greater

number of impurities. Larger cores were obtained from surface clay deposits, although these materials are coarse textured. The two inland sites, Biard and the Fort des Anglais, are near extensive surface concentrations of large nodules of high-quality flint (Douhet-Taillebourg, the Atelier des Martins and the Atelier de Claix, for example).

The sites span several phases of the Late Neolithic. Of the three, Semussac has the earliest deposits; its later materials overlap with the occupation of Biard. A small part of the sample from Biard appears to continue into the terminal phase of the Neolithic (or Chalcolithic) roughly contemporary with the earliest phase of the Fort des Anglais. The Fort des Anglais is principally known for its succeeding, Bronze Age levels, although this study is concerned only with the earliest, Terminal Neolithic/Chalcolithic phase. It is likely that social forms were changing, and perhaps rather rapidly, at this time. The range of activities at the ditched sites also may have changed from the beginning to the end of this period.

Excavations at Semussac were planned and carried out over several years, so the lithic sample from this site is large. In the absence of later occupation, it is also in good shape. The Chalcolithic sample from the Fort des Anglais is small, with the pieces redeposited and broken by later Bronze Age construction. The excavation of Biard was carried out quickly in response to rather unusual conditions, so this sample is small, although the individual pieces are generally in good condition.

The chronological distinctions used here apply to a larger area and are represented among these three sites by both vertical and horizontal (or spatially discontinuous) sequences. Three phases of unknown and probably unequal duration are usually distinguished during this period of some 800 years. The earliest (Matignons or MAT) is not subdivided. The second (Peu Richardien or PR) has two subphases ("a" and "c" for "ancien" and "classique"); these are defined by differing treatments of essentially similar ceramic motives. The chronological significance of this distinction and its relevance to the lithic industry is a subject of current debate. No major conclusions drawn here rest on this distinction. The Matignons and Peu Richardien phases make up the Late Neolithic, while the third (Artenacien or ART) covers the Terminal Neolithic/Chalcolithic. The preceding Neolithic is absent at the Fort des Anglais, while the small Artenacien sample from Biard is less clearly distinct from the Peu Richardien. The principal interest here is in broad trends from the earliest (Matignons) to the latest (Artenacien) phase.

Some of the lithic data presented here (Table 1) are summarized in Trinkaus (1986), and the effect of sample size on diversity has been investigated in Trinkaus (1990). For comparison, the flint materials are grouped into four broad categories that reflect their origin, usable sizes, textures, and other working qualities. The black and other nodular categories are found throughout this region in nodules of varying initial size and impurity. These appear to differ only in color, but are separated here since some small fragments of fine homogeneous materials cannot be separated from the other nodular category by visual inspection. There are

consistent differences in the working and form of these two categories, differences that would be swamped by the much larger size of the black category if the two nodular flints were combined. The coarse tan category is quite distinct, however, being opaque, grainy, difficult to flake precisely, tough rather than brittle, and readily polished. This material ranges in color from gray to tan to white. A range of unusually fine-grained, locally rare flints are classed as homogeneous materials.

Some localities in the center west are considered workshop sites because they have produced large quantities of cores, initial shaping debris, axe blanks, and fragments. They also lack other forms of occupation debris. Some of the blanks and debris associated with the workshops correspond to the lithic types found in later Neolithic sites, and the range of flint materials found in the sites generally corresponds to the flints found in workshop deposits. (Biard is an exception, since the excavated sample from this site contains little flint from nearby Douhet-Taillebourg.) There is strong evidence that the workshops were extensively used during the later Neolithic, although exploitation of these deposits was not limited to the Neolithic. The first expectation is therefore met.

How the workshops were used is an open question. They are known chiefly through surface collection of recognizable cores or blanks made over the last hundred or more years; evidence for secondary shaping and trimming is therefore absent. However, an examination of the stages of reduction present in each of the ditched and walled sites shows in what form the material arrived there and what stages of reduction were performed away from the workshops (Figure 2). Reduction is divided into preparation (cores, fragments removed to regularize nodules, decortification flakes), secondary working (trimming flakes), final products (other flakes, blades), and unclassifiable, amorphous chunks (Table 1). The most obvious trend is a decline in frequency of preparation and an increase in secondary working. The percentages of flakes and blades remain quite stable. Among homogeneous materials, in particular, the frequency of preparation of raw material chunks increases, then declines, apparently as a result of two simultaneous trends: an increase in availability of materials in a raw state and a decrease in on-site preparation in favor of secondary trimming and discard of products.

A breakdown of the preparation stage into its constituents (cores, nodule fragments, and decortification flakes) shows that cores and nodule fragments decrease from few to virtually none (Figure 3). Decortification flakes first increase slightly and then drop off as a percentage of the whole assemblage (Figure 2). For all materials, then, the materials associated with initial reduction become relatively more rare through time, suggesting a spatial separation of stages of reduction.

Use of metamorphic rocks from Brittany is supported by source analysis of individual specimens; a few of these are found at Semussac and Biard. The dozen or so examples are spread over some 800 years, however, and do not make a convincing argument for generation of social change by control of critical resources. Furthermore, evidence for use of flint from a major production center at

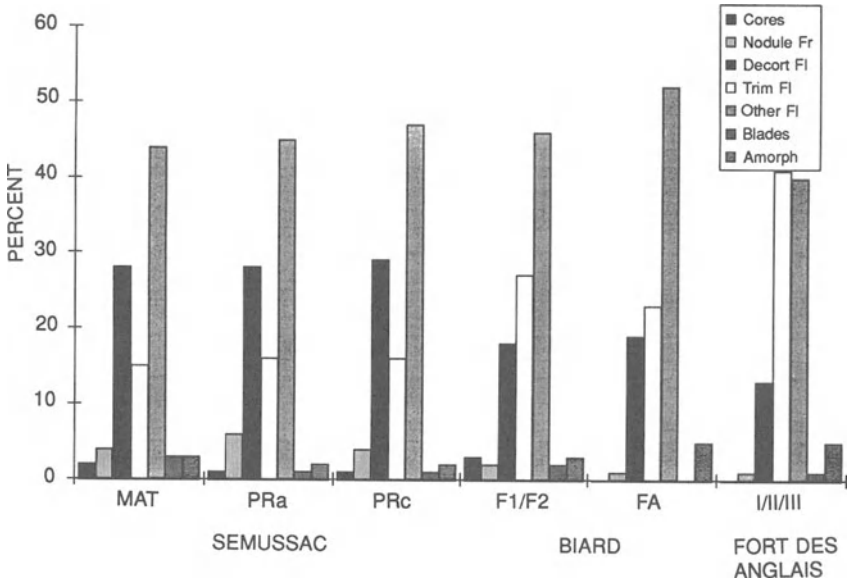

Figure 2. Stages of reduction by material type.

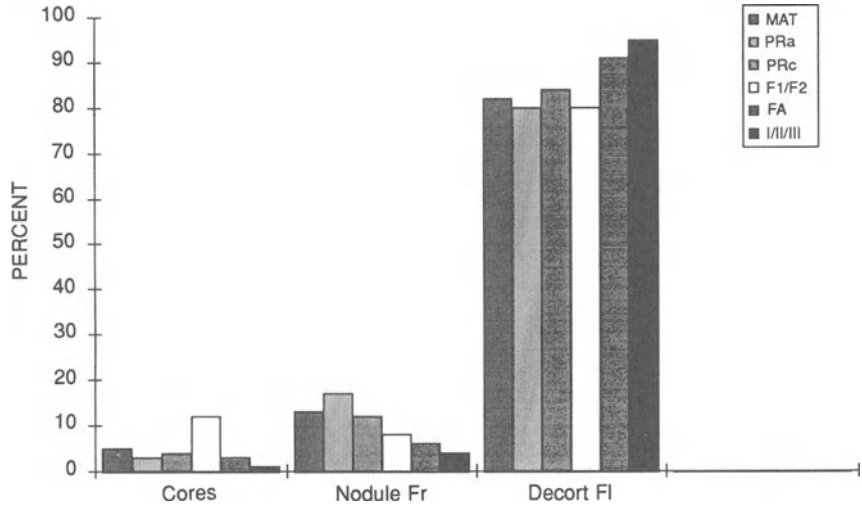

Figure 3. Initial reduction—all materials.

greater distance, such as Le Grand Pressigny, is shaky. This flint is less readily characterized and a definitive characterization has yet to be carried out. In any case, the relative frequencies of flakes and blades (including blade segments) indicate a stable preponderance of the former and only very small numbers of the latter (Figure 4). Biard does have a significant small blade (*lamelle*) component. The blades produced at Le Grand Pressigny are much longer (30 cm or more), however, and have proved exceedingly difficult to replicate; this was certainly a highly skilled production. If quantities of this material were being used at these sites, it was not in the expected form. These data do not suggest the circulation of large quantities of partly processed flint.

An examination of the distribution of raw materials shows some interesting trends in diversity and relative quantities, however (Figure 5 and Table 1). Nodular materials provide the bulk of all flint, with a predominance of black flint at Semussac and Biard and a greater variety at the Fort des Anglais. This probably reflects the nature of local flint sources. The use of coarse-grained flints is highly variable, being most important at Semussac and virtually absent at Biard. The latter finding is anomalous, since Biard is a few kilometers from a major surface deposit of coarse tan flint of variable texture. This flint is found in large workable pieces and the source has produced many axes and axe blanks. There is essentially no trace of initial working, secondary trimming and sharpening, or disposal of these materials in the sample from Biard, a lack which cannot be accounted for by

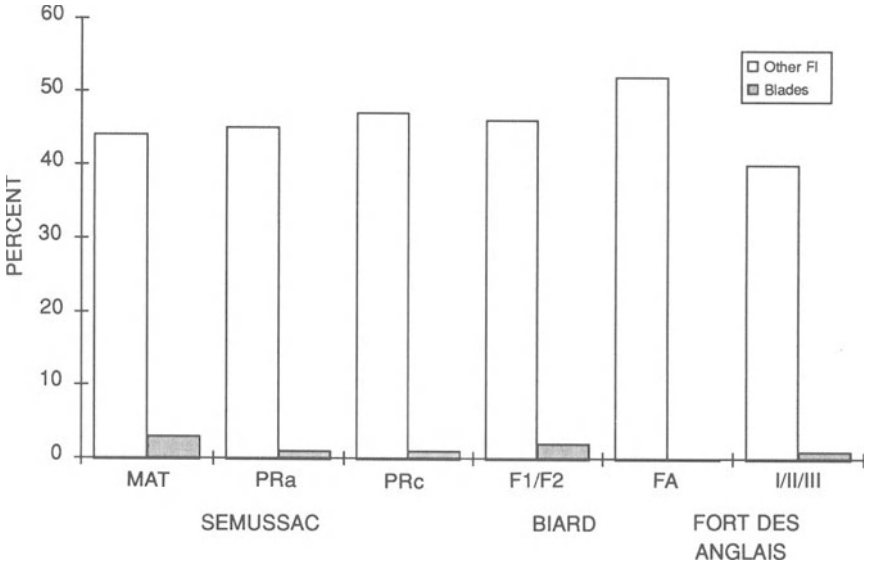

Figure 4. Frequencies of flakes and blades.

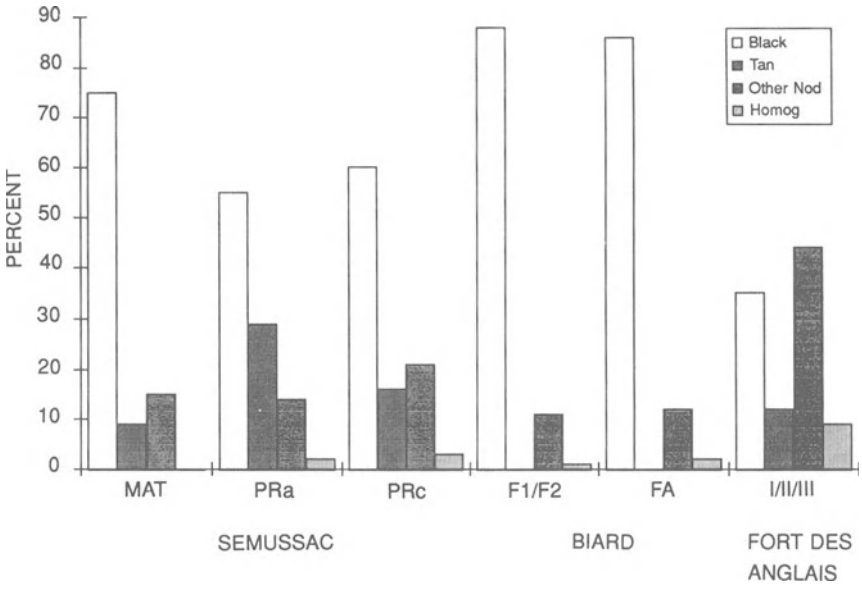

Figure 5. Raw materials by site and level.

Table 1. Lithic Data for Three Later Neolithic Sites

	Semussac			Biard		Fort des Anglais
	MAT	PRa	PRc	F1/F2	FA	I/II/III
Stages of Reduction						
Cores	21	35	65	41	4	5
Nodule fragments	50	175	220	26	9	17
Decortification flakes	324	843	1508	274	138	408
Trimming flakes	176	481	860	408	171	1329
Other flakes	510	1344	2486	709	384	1306
Blades	37	40	28	26	2	15
Amorphous chunks	30	61	113	47	38	152
Raw materials						
Black	75	1677	3261	1351	641	1115
Tan	107	878	865	1	0	384
Other nodular	174	423	1154	171	89	1433
Homogeneous	5	68	178	8	16	300
Raw materials for axe fragments						
Black	0	0	0	3	2	0
Tan	5	3	9	0	0	4
Other nodular	4	1	1	0	1	2
Homogeneous	1	16	17	4	1	1

sample size alone. There is, however, some increase in the frequency of fine material through the sequence at Semussac and at the Fort des Anglais. The overall trend is toward use of more kinds of flint and better-quality flints.

This does not say much about quantities, however, especially as different materials were being reduced to varying degrees. Mean piece weights therefore provide useful information, especially if considered with additional information on form and stage of reduction (see, e.g., the critique by Ammerman 1979). In this case, there is a general trend toward decreasing piece size and increasing likeness between all materials (Figure 6). (The extremely small average size at the Fort des Anglais is due to later perturbation of the Terminal Neolithic/Chalcolithic levels, however.) The magnitude of difference is exaggerated where samples are small, as is the case with homogeneous materials at Biard. Black and other nodular materials are similar throughout; in fact, they are much less variable than available piece size even at Semussac, where nodule size is smallest. There is a significant decrease in size of coarse materials; this is not a product of small sample size but of a change in the form of the pieces. From very large, little-shaped pieces in the early levels at Semussac, they become more extensively reduced and more often present in the form of chips from polished axes. Use of this material therefore becomes more labor intensive across these sites. Fine homogeneous materials show an initial increase in mean size, a result of more raw material chunks in the later Semussac

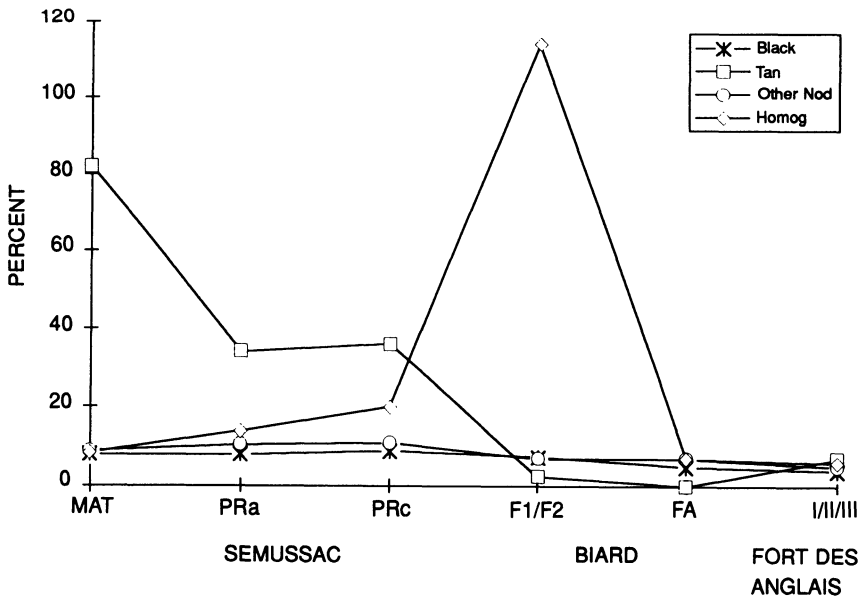

Figure 6. Mean piece weight by material type.

levels, before decreasing to join the size range of the other flints. These two trends, in diversity and quantity, indicate more use of homogeneous materials, less use of some local coarse materials and some decrease in the use of homogeneous materials in raw form. These results are consistent with the expectation that particularly valued sources will be more widely distributed in partly processed form (as axe blanks rather than blades in this case). However, these data do not support the appearance of this phenomenon at the expected date, or even at the beginning of the later Neolithic, but only at the end of that period.

A final bit of light is shed by the distribution of materials among fragments of polished axes, since the homogeneous and coarse tan materials are the most common axe materials (Figure 7 and Table 1). Black nodular materials were systematically avoided except at Biard. Only a few fragments, which may come from the nearby Douhet-Taillebourg site, were found in the Biard collection and none of these were polished. Other nodular materials, however, show a significant increase among axe fragments, especially at the Fort des Anglais, reflecting the greater diversity of materials there. The coarse materials are well represented, seeming to be favored as polishing materials. Their texture gives them toughness rather than brittleness, sharpness or precise flaking, obviously a desirable quality for an axe. Homogeneous materials are better represented among the axes than elsewhere, though there is a decline in this dominance through time, another reflection of the greater diversity at the Fort des Anglais. If the homogeneous

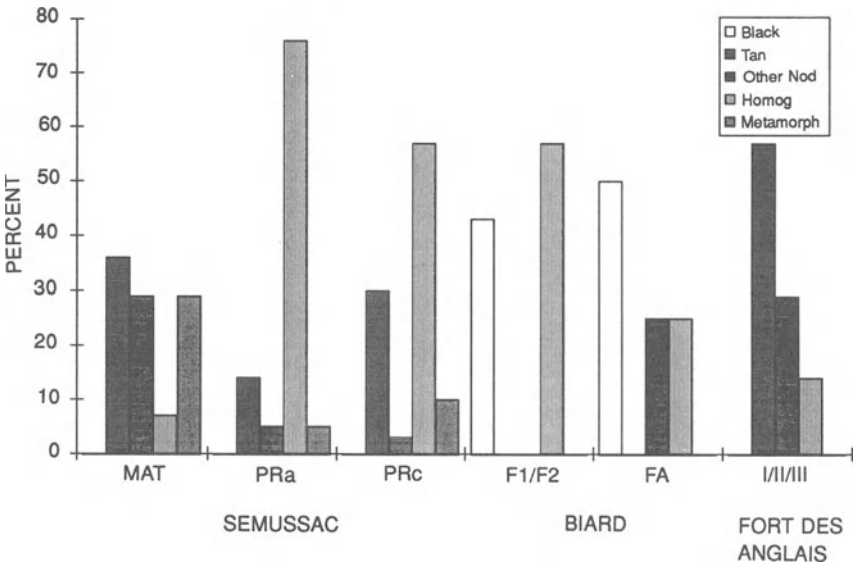

Figure 7. Axe fragments by material type.

materials were imported, then axe production cannot be considered as one of the industries tying these sites to specific or distant sources of supply.

In sum, there is evidence of extensive exploitation of specific "workshop" sites throughout this time period, and of the increasing spatial separation of initial and secondary stages of reduction, which indicate that tool preparation was becoming somewhat more specialized and centered around favored sources, at least for some parts of the tool inventory. Whether the tool preparers were becoming more specialized and the preparation organized by the upper levels of the social group, rather than by the individual or domestic production unit, is less clear. Evidence of dependence on extrasocietal suppliers for materials from a few localities is essentially absent for flint and slight for metamorphic rocks. Some exchange was certainly present but local materials were readily available as substitutes. Furthermore, with respect to flint, there is little evidence for trade in long blades or blade segments as it is usually envisioned. Their rarity may indicate that they were highly curated, but objects are curated because they are rare or otherwise hard to replace. Such small quantities in the midst of an abundance of local flint and a tool typology that is undemanding of high quality in raw materials suggests that there was little significant impact on basic societal organization. In addition, the homogeneous materials are present first in significant quantities in raw form. Subsequently, the raw form is less frequent, although this accompanies an overall decline in use of these materials.

There is, therefore, some evidence of workshop exploitation, spatial separation of stages of reduction, and task specialization in lithic production. The scale of this activity may be small, however, since surface clay deposits with flint are near all sites and known workshop sites are only a few kilometers from Biard and the Fort des Anglais. Lithic exchange apparently involved a wide range of materials, stages of reduction, and, presumably, areas of origin, although quantities seem to be small. Production and materials exchange and the associated mechanisms of restricted access therefore seem to operate only weakly.

CONCLUSION

With respect to the masked rank model there is a lack of fit between data and expectations. Responses to this situation generally focus on the data level (the data are inaccurate, insufficient, or irrelevant), or on the theoretical level (the construct-defining indicators and generating expectations are too vague, too limited, or internally inconsistent). The evidence also may indicate simultaneous exploitation of several options, societywide or more limited in scope, by which people may be socially defined and interconnected, their roles and tasks defined, their labor directed, goods moved, decisions made, and symbols wielded in an internally differentiated society. On the one hand, it would be pointless to argue in this case

that social differentiation is not taking place because these people were not doing what we expect with their stone resources. On the other hand, a model that expects social differentiation to rest on increasing control of labor, specialization, and restricted materials exchange, and social tensions great enough to require masking behavior, cannot readily dismiss the absence of evidence for an enforceable basis for that inequality in aspects of the archaeological record.

In short, the mortuary evidence indicates no elaboration of social rank at the proposed time, nor is there any indication among these data concerning production of utilitarian objects that such social pretense was needed. Fortunately, it is not necessary to take the absence of mortuary evidence for rank as an indication of masking behavior and, therefore, of the existence of rank. Ongoing research on the cycle of work that animates production, distribution, consumption, and deposition will determine more conclusively whether there was anything to be masked. This cycle, and the place of individual workers within it, is not an indicator of inequality, it is the thing itself, the reason for the existence of political deception, status emulation, and other social forces arranging material social reality. Burial analysis plays an important part in tracing this cycle, as do studies of materials acquisition, goods production, and distribution, especially where several lines of evidence indicate the presence of significant social inequality. In this manner, the cumulative improbability of complex arguments, as this one necessarily is, can be reduced and a well-supported view of the multifaceted operation of social rank be sought in the prehistoric record.

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Chapter 4

Diachronic Regional Social Dynamics

Mortuary Sites in the Illinois Valley/American Bottom Region

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For 25 years it has been generally acknowledged that archaeological remains from cemeteries carry symbolic content, but the methods by which we may identify and interpret these symbols have been greatly contested. Two works set the tone for the 1970s: Lewis Binford's seminal article, "Mortuary Practices: Their Study and Their Potential," first offered in 1966 and published in 1971, and Arthur Saxe's Ph.D. dissertation, *Social Dimensions of Mortuary Practices*, available since 1970. Both address the potential of mortuary studies for the reconstruction of social organization. This approach is particularly exemplified in the work of Joseph Tainter (1975, 1977a,b, 1978) during this period, and perhaps culminated in the volume *The Archaeology of Death*, edited by Robert Chapman and others (1981), with contributions by Richard Bradley, James Brown, Jane Buikstra, Lynne Goldstein, and John O'Shea. The Binford–Saxe approach may be encapsulated by the statement: The variability and structure in a society's treatment of its dead, including that which can be archaeologically recovered, will be isomorphic with the variability and structure of the social dimensions of the society.

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Beginning about 1980, and tied to a more general postprocessual critique of the New Archaeology, Ian Hodder (e.g., 1980, 1982, 1984, 1986) and others (e.g., Pader 1980, 1982; Parker-Pearson 1982; Shanks and Tilley 1982, 1988) began to question the foundations of the Binford–Saxe model. They insisted on the importance of such factors as ideology, power relationships, belief systems, and the malleability of social categories (contra the statics of Goodenough's [1965] role theory, a fundamental component of the Binford–Saxe model) in the creation of the mortuary domain, concluding that it is not a straightforward procedure to "read" a cemetery. Indeed, they contend that the analysis of a mortuary domain is not a matter of discovery, but rather one of interpretation.

These two polar positions seem still to characterize current analyses of cemeteries (as the processual/postprocessual debate continues in archaeology in general [e.g., Preucel 1991]). It is not my intention to further this debate, nor even to further discuss it. Much of our inability to arrive at a consensus on the procedures of cemetery analysis stems from the fundamental overdetermination of either of these theoretical approaches. The same variability within the mortuary sphere is defined and then simply arrayed into one or another explanatory model; the choice of model is independent of any considerations of funerary practice. In particular, analyses are predetermined by the researcher's ultimate commitment, explicit or implicit, to one of two primary classes of explanatory metaphor: biology or interpretive sociology (following Giddens 1984:1–2; see also Charles 1992a).

In the remainder of this chapter, I will outline an attempt to steer a synthetic course between the two poles using mortuary symbolism as the vehicle. Three lines of thought underwrite what follows: (1) a revision of Saxe's (1970) Hypothesis 8, as adjusted by Goldstein (1980, 1981), and further emphasizing a relationship between cemeteries and mobility, rather than scarce resources per se (Charles and Buikstra 1983); coupled with (2) a definition of symbolism as one means by which communities are constructed (Cohen 1985); and (3) a reliance on narrative as a legitimate format for marshaling archaeological data across broad expanses of time (Gero 1991; Hodder 1991:13; Landau 1984, 1991; Terrell 1990). This framework will be applied to the prehistory of the region surrounding the confluence of the Illinois, Missouri, and Mississippi rivers in the American Midwest.

INTERPRETIVE FRAMEWORK

Delineating Territorial Structure

The reworked version of Saxe's Hypothesis 8 takes the following form: Social groups residing in environments in which the natural or culturally modified resource distribution supports a sedentary or restricted mobility mode of subsis-

tence may employ formal disposal areas for the dead to symbolize corporate membership, rights, and inheritance, whereas social groups reliant on a more mobile means of subsistence will not (modified from Charles and Buikstra 1983:120; see also Charles 1985; Goldstein 1980, 1981). The implied relationships are clear at the extremes. On the one hand, sedentary agriculturalists, competing for land, may symbolize ownership of, or rights of access to, a territory by reference to ancestors buried in that land, an appeal to "it's always been that way." On the other hand, for whatever reason a cemetery is created or maintained (e.g., Hodder 1984), it will be on or within the boundaries of the group's habitual domain (this formulation excludes such recent and historically complex situations as the Merina [Bloch 1971]). Gatherer-hunters predominantly dependent on widely dispersed, seasonally shifting, or highly mobile resources, situations in which sedentism and even rigid territoriality are out of the question, would be more to likely focus on postcapture rights and obligations rather than on precapture demarcation. More to the point from a methodological perspective, they would not routinely return to a particular location that could serve as a permanent cemetery. Most gathering and hunting populations will fall somewhere along an intermediate gradient from foragers to collectors (Binford 1980). The specifics of each case—level of mobility, size of collection area, intensity of competition, tradition—will affect whether or not populations choose to symbolize the relationship between corporate groups and resource territories through the construction and maintenance of formal cemeteries. We can interpret the presence of cemeteries, but not necessarily their absence (Goldstein 1981:8). In terms of archaeological reconstruction, then, recovery of a cemetery indicates a certain degree of restricted mobility or territoriality, and the regional distribution of concurrently used cemeteries maps out the arrangement of contemporary communities and/or subsistence territories (Charles 1992b; Charles and Buikstra 1983: 121–122).

Symbolic Aspects of Mortuary Practices

The facet of symbolism to be exploited is its relationship to the notion of community. A *community* will be defined simply as "a group of people [that] (a) have something in common with each other, which (b) distinguishes them in a significant way from the members of other putative groups" (Cohen 1985:12). This definition stresses both similarities within groups and differences between groups, and suggests that our attention can be profitably directed at the symbols that a group may share or by which it distinguishes itself from other groups. In other words, we are interested in the manner in which symbols are used to mark the boundaries between groups in order to define inclusion in and exclusion from the group (Cohen 1985:12–13). Meaning is not inherent in symbols, but is something

that people assign to the symbols that they use. This allows people to communicate based on their use of shared symbols, but it does not imply that they also share the meanings attached to those symbols (Cohen 1985:16). The meaning affixed to a particular symbol is ultimately a personal matter, filtered through the individual's experience. Symbolic communication requires only that the two parties involved share the symbol. Each may assign a different meaning to it, and at the same time assume that the other party shares that meaning. So long as the behavior of the other does not contradict this assumption, communication will be successful. On this basis, then, it is possible for individuals or groups with very diverse interests on one level to share symbols and be part of the same community on another.

Unfortunately, these very conceptions of symbol and community are problematic for the archaeologist, since a shared symbol may have very different meanings attached to it by the individuals and groups that share it. As archaeologists we may readily establish the spatiotemporal distributions of the more obvious symbols, but establishing their meanings is quite another matter.

Narrative Format

The mortuary data summarized in this chapter accumulated over 8,000 years, spanning the Archaic through Mississippian periods. The paucity of information relative to the length of time tends to reduce this prehistory to a succession of "events"; an account of such a sequence in turn readily slips into a narrative format (Landau 1991:ix). What follows is the story of changing funerary practices in the area surrounding the confluence of the Illinois, Missouri, and Mississippi rivers during the period roughly 6500 B.C.–A.D. 1300. Unlike narratives of human evolution (Landau 1984, 1991) or of the prehistory of the Pacific (Terrell 1990) that have been articulated, where challenges to, and actions of, the "hero" (Australopithecines or Lapita culture singularly embodied) form the core of the story, the present narrative will be that of a place. The consecutive inhabitants of the central Mississippi Valley region were historically related in the broad sense, that is as antecedents/descendants within the Eastern Woodlands, but we cannot assume a direct continuity, biological or cultural, at successive points in time. The degree of continuity is an empirical question. In any case, such a story constitutes a working hypothesis, amenable to subsequent testing (Gould 1986, 1989; Landau 1991; Terrell 1990).

The narrative mode of data presentation is useful for a number of reasons. Plots provide frameworks through which people readily understand a matrix of events and processes (Gero 1991; Landau 1991). It may be easier to interpret change—where alterations in one system can be related to alterations in another—than stasis. At the same time, it is not necessary to specify a single, overarching process; each event may result from a different and independent

process. In particular, it is possible to admit contingency as a significant factor in the development of a particular sequence or final outcome (Gould 1989; Landau 1991; Trigger 1991). Contingency, causation at the scale of the here and now, is the essence of historical, as opposed to "scientific," explanation, but more importantly, it allows actions of individuals to have an impact on that history. This in turn underwrites an "interpretive archaeology," where the meanings of the events for the original actors, for us, and for others can be explored (Gero 1991; Hodder 1987, 1991).

Density, Variability, Space, and Time

To develop an approach based on the above, it is perhaps advantageous to return to a conception of archaeological material central to the analytical archaeology of David Clarke (1968; see also Binford 1987; Spaulding 1960), specifically, the notion that sites, features, artifacts, ecofacts, and so on must first be treated as items with relationships among themselves. Only after we have clarified the space and time coordinates of elements and/or their attributes may we begin the process of translation of present distributions into past behaviors. This is essentially a methodological (archaeological) consideration prior to the theoretical (anthropological) positions that either Binford or Hodder seem to prefer as their starting points. Manifestations of material culture arrayed in a space–time framework then become the "points" connected by the narrative (hypothesis) we construct.

Cemeteries, then, may be defined as a class of data comprising skeletal remains of the dead, with attributes such as state of preservation, age, sex, pathology, evidence of manipulation, and grave goods or other associations; the dates and length of use of the cemetery; spatial extent of the cemetery; formal or spatial regularity of interments within the cemetery; spacing and density of comparable cemeteries across the region; their location vis-à-vis other types of sites; variability in the above factors through time; and so on. Many of these dimensions would have carried symbolic meaning. At the regional level (the format for this book), this information can be collapsed into a conceptual framework of space and time versus density and variability. In brief, densities of cemeteries and/or interments within cemeteries through time reflect diachronic population levels; densities across space delineate synchronic settlement distributions; variability in the form and use of cemeteries through time registers social and cultural change; variability across space indicates boundaries and interaction. Combined, these patterns provide a unique perspective on long-term social and demographic dynamics.

In west central Illinois, regional mortuary analyses have chronicled variability in mobility during the Archaic; abandonment, resettlement, and demographic stabilization during the Woodland period; and a transformation of world view

with the appearance of Mississippian culture. Cemeteries were socially active in very different ways during each of these phases. The following section will expand and document this narrative.

THE ILLINOIS VALLEY/AMERICAN BOTTOM REGION

The lower Illinois River valley and surrounding regions (Figure 1), in particular the central Illinois Valley and the American Bottom of the Mississippi River, have been the scene of intense professional archaeological activity for well over a hundred years, since before the time of Cyrus Thomas's (1894) massive mound study (e.g., Henderson 1884; Squier and Davis 1848). The level of archaeological endeavor reflects the intensity of prehistoric occupation characteristic of the area, particularly the larger river valleys, throughout most of the Holocene. The Illinois River valley stabilized well before the mid-Holocene, producing a variegated and highly productive environment that was routinely exploited after 6500 B.C. (Brown 1985a; Brown and Vierra 1983; Hewitt 1983). The Mississippi has never attained the same level of stability, but both valleys contained numerous streams, backwater lakes and marshes, lush vegetation, and dense animal populations. Extensive upland forests and prairies, with resources complementing those of the floodplains, were available beyond the bluffs overlooking the valleys. A full reconstruction is outside the scope of this chapter, but much geologic, environmental, and subsistence information is available (e.g., Asch and Asch 1985; Brown and Vierra 1983; Cook 1986; Hajic 1989; Hewitt 1983; Johannessen 1984; Kelly and Cross 1984; Neusius 1986; O'Brien 1987; Phillips and Gladfelter 1983; Stafford and Sant 1985; B. Styles 1981; T. Styles 1985; White, Johannessen, Cross, and Kelly 1984; Wiant and McGimsey 1986).

The following descriptions are arranged by traditional chronological periods for convenience. The geographic scale of the analysis shifts by period, ranging from a tight focus on the lower Illinois Valley to a broader consideration of the area surrounding the confluence of the Illinois, Mississippi, and Missouri rivers, depending upon the availability of data and/or comprehensive analyses.

Early Archaic (ca. 9000–6000 B.C.)

Groups of burials in midden areas of floodplain habitation sites had accumulated by the later portion of the Early Archaic in this region, when the intensity and duration of site use appears to have increased as the dryness of the Hypsithermal led to increased valley occupation (Brown and Vierra 1983:167; Brown 1985a: 213). For example, nine human and five canine burials were recovered from Horizon 11 at the Koster site, which has been dated to around 6500 B.C. (Brown and Vierra 1983:183). There is no evidence to suggest that these interments reflect

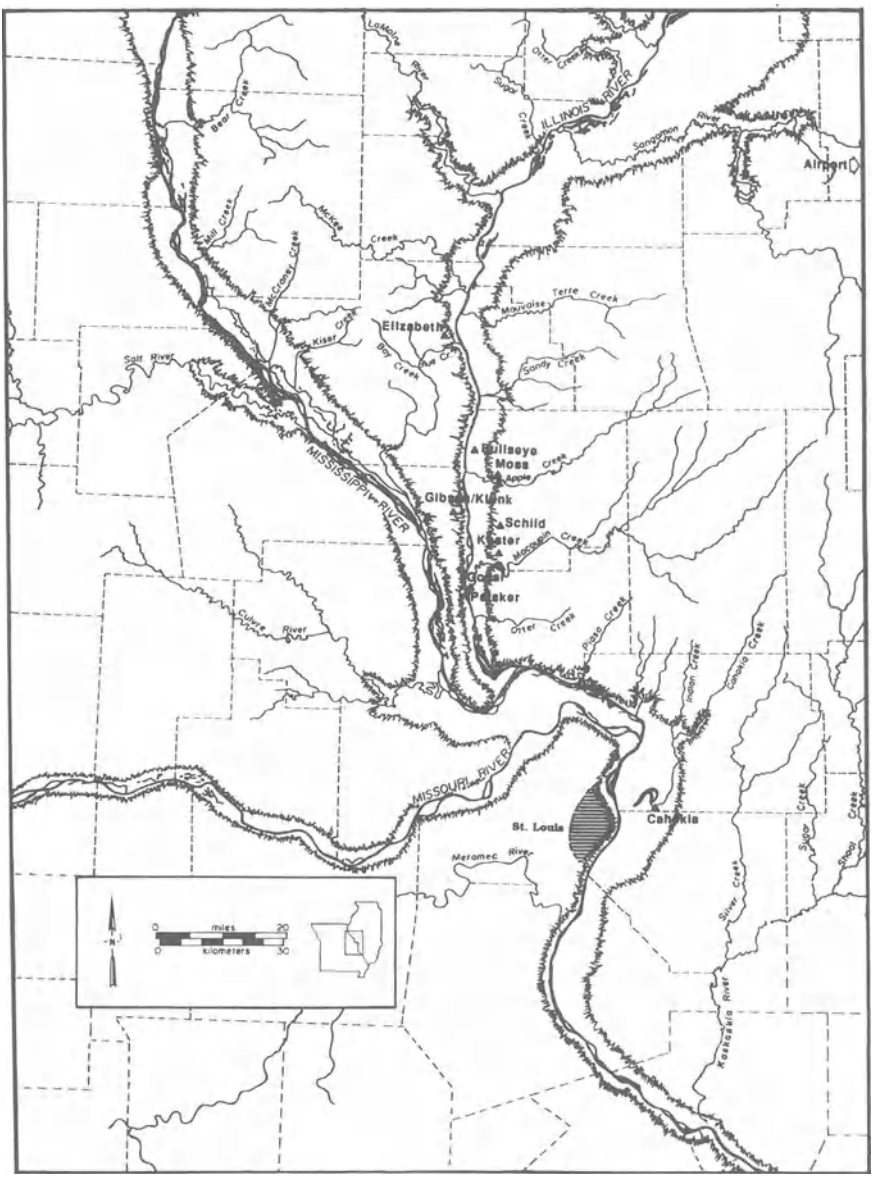

Figure 1. The confluence of the Mississippi, Illinois, and Missouri rivers, including the American Bottom (opposite St. Louis) and the lower and central Illinois Valley. Locations of sites discussed in the text are provided.

a change in burial practice so much as a shift in the probability of finding them: more burials would accumulate during the longer occupancy of the floodplain base camps.

Middle Archaic (ca. 6000–3000 B.C.)

There were two important transformations of mortuary behavior that have been recorded for the Middle Archaic. First, by at least 4400 B.C., based on a ^{14}C date from the Elizabeth site (Albertson and Charles 1988:34), cemeteries were being placed in knolls on the margins of bluffs overlooking the floodplains of the Mississippi and Illinois rivers (Charles and Buikstra 1983; Cook 1976; Knoblock 1939; Montet-White 1968; Perino n.d.; Titterington 1950). The earliest bluff-top mortuary activity corresponds to a shift in mobility strategies from residential to logistical patterns, seen in the metamorphosis of sites from transient encampments to year-round base camps, following the peak of the Hypsithermal (Asch and Asch 1985; Brown and Vierra 1983; Carlson 1979). The appearance of bluff-top cemeteries has been interpreted as the emergence of symbolic reference to the burial sites of ancestors as a means of asserting exclusive or primary rights of use by corporate groups over particular resource territories (Charles and Buikstra 1983). Interments still occur in habitation middens, but these seem to represent socially marginal individuals such as the young, the elderly, or the infirm (Buikstra 1981). The majority of the population is buried in the bluff-top sites.

The second new form of funerary activity is suggested by the Bullseye site, where recent excavations on a sand ridge in the Illinois Valley (Buikstra 1988; Hassen and Farnsworth 1987) have uncovered over 100 burials and numerous artifact caches not in direct association with particular burials (Jane Buikstra, personal communication, contra Hassen and Farnsworth 1987). The artifact assemblage suggests use sometime around 4000 B.C. There is a possibility that there may in fact have been two components at the site, so that it would seem that Bullseye either brackets the Elizabeth cemetery, or slightly postdates it. Bullseye and a similar floodplain terrace site, Godar (Cook 1976; Montet-White 1968; Titterington 1950), with their artifact assemblages numbering in the hundreds, are very different from the bluff-top sites like Elizabeth and Gibson (Table 1). The latter seem to be primarily, and probably exclusively, single-community cemeteries. Bullseye and Godar are more reasonably interpreted as multigroup ceremonial sites, characterized by the disposal of large numbers of artifacts of local and nonlocal material and manufacture, but at which burial also occurred. Large, permanent occupations of the main valleys like those in Koster Horizon 6 (three major components dated 3850–2950 B.C. [Brown and Vierra 1983:185]) did not regularly appear until sometime after 2000 B.C. (Brown 1985a; Emerson and McElrath 1983). Between 5000 and 2000 B.C. there seems to have been variability in the emphasis on residential versus logistic procurement strategies. Sites like

Table 1. Summary of Artifact and Burial Data from the Bullseye, Godar, Elizabeth, and Gibson Sites

Site	Artifacts						Burials
	Bifaces	Bannerstones	Axes	Drills	Plummets	Total	
Bullseye[a]	296	29	43	45	1	414	100+
Godar[b]	400	24	25	40	6	495	"several"
Elizabeth[c]	19	1	1	1	2	24	100+
Gibson[d]	38	0	2	2	0	42	36+

[a]Artifact data from Hassen and Farnsworth (1987); burial data from Buikstra (personal communication).
[b]From Titterington (1950).
[c]Artifact data from Odell (1988); burial data combined from Albertson and Charles (1988) and Frankenberg et al. (1988).
[d]Artifact data from Perino (n.d.); burial data from Buikstra (1981).

Bullseye and Elizabeth may have been ritual loci appropriate to different mobility regimes. During periods of high mobility (residential mode), status competition would be structured in part by the ability to control movable wealth. Status displays occurred in the context of regular gatherings of a number of groups from up and down the valley, on a spatial scale not yet defined. When mobility decreased (shift toward logistic mode), competition would switch to control of access to specific resource zones. In the former case, status competition would be played out through the effective destruction (burial) of "expensive" items obtained via reciprocal exchange. With decreased mobility, competition would be tied to control of corporate activities revolving around resources fixed in space, with status legitimated in part by reference to ancestral burial grounds. The swiftness with which mortuary practices can change relative to shifting subsistence conditions has been documented ethnographically (e.g., Saxe and Gall 1977).

An obvious alternative interpretation of Bullseye and Godar is that they represent a third mode of burial treatment contemporary with the bluff-top and midden interments (Hassen and Farnsworth 1987). This model, however, fails to account for the apparent variation in mobility throughout the mid- and later Archaic, a factor the above model directly addresses. Furthermore, this type of site is not present at the end of the Late Archaic when permanent settlements predominate (see below). Clearly, additional research is necessary to satisfactorily support either model.

Not to be lost in these details is the fact that symbols had now come to function within communities at two distinct levels. Full corporate membership within the local community would have been acknowledged by burial in the formal, bluff-top cemetery rather than in a midden (Buikstra 1981; Charles and Buikstra 1983), and presumably was evident in various ways, such as ornamentation or dress, worn at the floodplain gatherings. At the same time, much of the

ritual and symbolism would have been directed at other groups, either as a means of territorial exclusion or to demonstrate wealth or status, with the aim of attracting advantageous mate exchanges, trade partnerships, new members, and so forth. The latter symbolic community clearly transcended the local group.

Late Archaic (ca. 3000–1000 B.C.)

As noted, sites like Bullseye seem to have disappeared by at least the middle of the Late Archaic (ca. 2000 B.C.), when large, permanent settlements became the norm, but the bluff cemeteries persisted along the main valleys (Cook 1976; Montet-White 1968; Titterington 1950). Moreover, similar sites were being constructed in elevated locations along the smaller rivers tributary to the Illinois and Mississippi (Figure 1; see Bacon and Miller 1957; Chapman 1975; Charles and Buikstra 1983; Cook 1976; Klepinger and Henning 1976; Roper 1978; although Roper [1991] has recently argued that the Airport site has a Middle Archaic component represented by one burial). It would seem that regional population levels had grown to the point where decreased mobility and increased territoriality promoted symbolic reference to ancestral claims throughout the major and minor drainage systems (Charles and Buikstra 1983). Of note is a difference in the condition of the remains in the main versus secondary valley burials. The majority of interments along the Mississippi and Illinois valleys were primary inhumations; virtually all the burials along the smaller rivers were redeposited. This pattern reflects the differences in size of the corresponding resource catchments (Charles and Buikstra 1983). Communities living along the main rivers were able to meet their subsistence requirements within relatively small territories. In the upland zones, groups had to range over much larger areas, and deaths more frequently occurred at some distance from the cemetery. The dead were curated until the seasonal round brought the group within range of the cemetery. This pattern again suggests a difference between logistical and residential mobility strategies, this time synchronically between primary and secondary drainages, but with more restricted movement in the latter case than had been characteristic during portions of the Middle Archaic.

Terminal Archaic (ca. 1000–600 B.C.)

Another development by the end of the Archaic was an increase in the complexity of funeral ritual (Charles, Buikstra, and Konigsberg 1986). Rather than the large features or repeated interments that distinguished earlier Archaic cemeteries, Terminal Archaic sites show evidence of formal opening and closing of particular burial grounds and for the individuation of corpse treatment. For example, in Klunk Mound 7 (Perino 1968) the first event seems to have been the construction of a crematory, over which red ocher was sprinkled and then a small

mound built. Subsequent burials and crematories (without ocher) were added over the small mound. The final act was the interment at the top of the accreted mound of a multiple grave of adolescents, the only extended burials in the cemetery. Furthermore, the very young, the aged, and individuals with physical problems that would have led to their exclusion from bluff-top burial earlier in the Archaic, and their burial in village middens instead, were now routinely interred in the formal cemeteries (Buikstra 1981; Charles et al. 1986). There is also more variability present in the treatment of burials. These developments–ritual cycles, inclusion of the infirm, and individualized treatments–anticipate later Woodland mortuary practices. The only marked change in other areas of life during and prior to this time was the appearance of domesticated plants during the latter part of the Archaic (Asch and Asch 1985; Smith 1989; Watson 1989), so perhaps the increased formality and complexity of funerary behavior indicate parallel transformations in the social organization necessitated by the greater coordination required for successful horticulture.

Early Woodland (ca. 600–150 B.C.)

Even more puzzling is the disappearance of bluff-edge cemeteries in the lower Illinois Valley region during the Early Woodland period (Charles et al. 1986). The only known cemetery from this period, Peisker (Munson 1982; Perino 1966a,b; Struever 1968), is adjacent to a habitation site along the river, and contains between 8 and 13 individuals and some calcined remains (Charles et al. 1986; Perino 1966a). There is evidence of a reduction in habitation site density, perhaps including a major shift in settlement patterns from nucleated to diffuse (Asch, Farnsworth, and Asch 1979; Munson 1982), with possible abandonment of the valley from 200 to 50 B.C. (Farnsworth and Asch 1986). Explanations for this population redistribution have not been forthcoming. A similar pattern appears in the American Bottom (Emerson and Fortier 1986; Fortier, Emerson, and Finney 1984). Reduction in habitation site numbers was not as marked, if it occurred at all, in the nearby central Illinois Valley (Conrad 1986; Munson 1986) and Missouri side of the Mississippi drainage (O'Brien 1987; Pulliam 1987). Thus, whatever was happening in the lower Illinois Valley and American Bottom appears to have been a very localized phenomenon.

Middle and Late Woodland (ca. 150 B.C.–A.D. 800 [or 1000])

Two trends have been documented in Middle Woodland death ritual that follow from the apparent Early Woodland abandonment of the lower Illinois Valley. First, the resettlement of the lower valley largely proceeded from the central valley southward. The pattern is evident from both habitation (Farnsworth 1986; McGregor 1958) and mortuary site distributions (Buikstra 1988; Buikstra et al.

1987; Charles 1985, 1992b). The earliest burial mounds in the north were constructed around the mouth of the largest tributary on the west side of the river (Buikstra et al. 1987; Charles 1985, 1992b). Subsequent mound groups were located a few kilometers north or south of the initial site, seeming to reflect the establishment of distinct corporate territories. This pattern of settlement continued to the north and particularly toward the south, including the other side of the valley, ultimately resulting in dense occupation of the entire lower valley by the end of the Middle Woodland period. Comparable data are not available from the central Illinois Valley, the adjacent Mississippi Valley or the American Bottom, but the aggregation of populations into the main valleys appears to have been a generalized phenomenon at this time (Braun 1987).

The second trend involves the internal structure of the mounds and the associated mortuary behaviors. Much attention has been directed at the variability within Middle Woodland mounds in this region, largely in the context of a search for hereditary ranking (Brown 1981). Virtually all of this research has focused on the material recovered from the Gibson–Klunk mound group in the central section of the valley (e.g., Braun 1977, 1979, 1981; Brown 1979, 1981; Buikstra 1976; Perino 1968, n.d.; Tainter 1975, 1977a,b, 1981, 1983). Brown (1981; see also Buikstra 1976; Charles 1992b) has usefully encompassed this variation within a model comprising two distinct burial tracks: (1) one based on temporary corpse storage in the central tomb of the mound with eventual burial (generally as disarticulated, bundled remains) around the ramp encircling the tomb, except for the last bodies, which were left in the chamber; (2) the second composed of individuals buried in tombs or graves placed outside of and tangential to the ramp. He suggests that this pattern reflects the existence of two or more lineages in the community. Much of the rank differentiation detected by the other studies actually represents variability in burial treatments between the lineages, with the dominant lineage using the central tomb track (see below), or a confounding of stages in a process with status (e.g., Tainter's [1977b] isolation of central tomb versus bundle burial as representative of different ranks).

The Gibson–Klunk site was used in the latter half of the Middle Woodland sequence. The more recent excavation of the earlier Elizabeth site (Bullington 1988; Leigh, Charles, and Albertson 1988) in the northern end of the lower valley indicates that near the beginning of the period of resettlement the two-track structure of community cemeteries may not have existed. Most burials were in a ring of graves, usually, but not always, around a central roofed pit. The central pits of these mounds were not processing facilities, as were the later tombs at Elizabeth and Gibson–Klunk. During the early period of resettlement, incoming groups composed of kinship units probably established their own communities (see Fix [1979:214–218 and references] for genetic evidence of the frequency of such fission–fusion processes in kinship-based societies). Some of these communities

would have become larger and more powerful by attracting subsequent immigrants (see Kopytoff 1987 for an example of the possible dynamics of such an "internal frontier"). Competition among the elites of different communities, and among lineages vying for status within communities, was played out in mortuary ritual (by the size of the facility, by the inclusion of grave goods, etc.) and through the exchange of exotic raw materials and manufactured goods—the so-called Hopewell Interaction Sphere (e.g., Caldwell 1964; Seeman 1979; Struever and Houart 1972). The process would have intensified as land became more scarce. The Gibson–Klunk site, with its two-track mortuary program, may represent this latter stage, where the descendants of the original settlers have maintained their position on the basis of priority, with later immigrants forced to assume secondary status (Charles 1992b; see also Kopytoff 1987). The large floodplain centers identified by Struever and Houart (1972) may have been the ultimate outcome of such competition, with the earliest community in a particular locale elevated in status as later communities clustered around it. Throughout the Middle Woodland period, the majority of habitation was concentrated in the main valley (Braun 1987), in contrast to the more dispersed populations of the Late Archaic period. Large-scale occupation of the secondary valleys and uplands did not reappear until the middle of the Late Woodland period with the introduction of the bow and arrow around A.D. 700 and maize agriculture around A.D. 800 (Asch et al. 1979; Johannessen 1984).

The shift from Middle to Late Woodland along the lower Illinois River corresponds to the demographic saturation of the valley, as indicated by mortuary site distributions (Charles 1985, 1992b). Subsequently, mound density and burials per mound continued to increase (see O'Brien [1987] and B. Styles [1981] for the subsistence correlates of territorial packing and catchment shrinkage). The Middle to Late Woodland transition has often been associated with the "decline of Hopewell" (e.g., Griffin 1967; Hall 1980; Tainter 1983, 1987), but as Braun (1986; Braun and Plog 1982) and O'Brien (1987) have pointed out, Late Woodland social and technological developments form a logical progression of "tribalization" and coevolutionary processes from Middle Woodland conditions. This is not to suggest that the material record will be one of gradual change. The Hopewell exchange network evaporated and there were rapid and major alterations in mortuary ritual at this time. Mounds abruptly decreased in size, and the entire central tomb–ramp complex characteristic of later Middle Woodland mounds disappeared (Charles 1985, 1992b). Late Woodland mounds are much more like earlier Archaic structures, with accretional cycles in the construction and use of the mounds, with little horizontal structure, and with much less differentiation among burials (Kerber 1986; Tainter 1977b).

During the demographically unstable Middle Woodland period elite status and corporate unity were in part maintained through elite manipulation of fu-

nerary ritual and control of access to Hopewell trade networks (Charles 1992b). In addition, both institutions served as mechanisms through which local resource shortfalls could be ameliorated (e.g., Brose 1979). The trade partnerships and the funerals, which were pan-local affairs, maintained ties to other communities that could be tapped in such circumstances. Given the virtual filling of the valley coincident with the appearance of Late Woodland material culture, the ensuing demographic stabilization would have led to the routinization of kinship and marriage networks. These alliances would have provided alternate paths for resource redistribution that bypassed the elite (inter- and intragroup) exchange and ritual networks. We observe this process in the archaeological record as the dissolution of the Hopewell Interaction Sphere and the disappearance of the classic Middle Woodland burial mound, since these were both material manifestations of elite activities. Middle Woodland mortuary ritual was regionally homogeneous; in contrast, Late Woodland ritual was marked by increasing diversity among contemporary mounds (Kerber 1986). This pattern probably indicates that funerals had become strictly local affairs, with mortuary symbolism primarily meaningful within the immediate group. The conspicuous consumption of labor and material characteristic of Middle Woodland intergroup communication was no longer important. The entire arena of elite social competition was undermined by the stabilization of the kin networks. The "simplification" of Late Woodland burial practices should not be mistaken for a simplification of Late Woodland social organization (e.g., Tainter 1977b). Rather, investment in social strategies had taken other, less archaeologically visible forms. Again, comparable data are lacking from regions outside the lower Illinois Valley.

The Hopewell phenomenon was obviously widespread. Its development and dissolution throughout the Eastern Woodlands may be related to a general shift from more dispersed Early Woodland subsistence strategies to the Middle Woodland focus on the major river valleys. The intensity of Hopewell activity in some locations, like west central Illinois, may correlate with the degree of demographic transformation involved, with the lower Illinois Valley being an extreme case (Charles 1992b). We need a sharper focus on the actual timing, nature, and magnitude of change between Middle and Late Woodland across the Midwest (Braun 1988).

Mississippian (A.D. 800 [or 1000]–A.D. 1300)

The most marked transformation in this entire sequence comes at the end of the Late Woodland period, between A.D. 800–1000, when Late Woodland social and technological trajectories led to a relatively abrupt adoption of Mississippian (maize-based) subsistence practices, social organization, and art forms (e.g., Brown 1985b; Kelly 1990; Milner 1990). In the American Bottom the impressive

Cahokia community emerged (Emerson and Lewis 1991; Kelly 1990; Milner 1990), while in the central Illinois Valley pyramidal mound centers appeared, perhaps introduced by migrants from Cahokia (Conrad 1991; Harn 1978). These Mississippian developments may have initially bypassed the lower Illinois Valley for the most part, since there is evidence for substantial Late Woodland–style habitation well into what would be the Mississippian period, and only scattered remains of Mississippian activity (Farnsworth, Emerson, and Glenn 1991). The uneven distribution of early Mississippian culture may reflect either the greater agricultural suitability of the central Illinois Valley and American Bottom landscapes, or the ability of those in positions of power to resist the changes. Very little is known of social dynamics of the transformation at the local level.

Throughout the region, bluff-top burial mounds were increasingly replaced by floodplain cemeteries, particularly at the more peripheral, nonelite sites. Among nonelite cemeteries in the American Bottom, earlier Stirling and Moorehead phase burials were placed in bluff-crest mounds, while later Sand Prairie phase dead were interred in floodplain cemeteries (Milner 1984). Goldstein (1980, 1981) has documented a similar change in the lower Illinois Valley at the Schild (see also Perino 1971) and Moss cemeteries. The earlier Schild Knoll A and B cemeteries were located adjacent to, but down slope from, the ridge-top Late Woodland mounds at the site. The later Moss cemetery was placed along the very base of the slope at the bottom of the bluff, in proximity to the residential site. At the larger sites, like Cahokia and Dickson mounds in the central Illinois Valley, elite mound burial continued as one means of status differentiation (Conrad 1991; Milner 1984). In all cases, there is a clear emphasis on the orientation of burials and their arrangement in rows (Conrad 1991; Goldstein 1980, 1981; Milner 1984)—distinctly non-Woodland practices. Furthermore, this shift in mortuary ritual reflects the reemergence of a widely shared symbolic system, as is evident in other media and contexts (e.g., Brown 1985b), but one much more structured and pervasive than had been the case with Hopewell.

It is tempting to see the return of cemeteries to the floodplain in later, nonelite Mississippian communities within the same framework in which we viewed their original ascent to the bluff tops over 5,000 years earlier. The transition to a high reliance on maize reconfigured the human–land relations in the region: Large collection territories that could be surveyed from the ancestral burial grounds, or, conversely, territories that could be demarcated by the sight of ancestral cemeteries on the bluffs above, were no longer central to the economy. Now the fields in the immediate vicinity of the village or hamlet provided a major component of the diet. Perhaps more importantly, it was the agricultural timetable, rather than the annual progression of the biotic community, that became the basis for the economic, social, and ritual schedules. The complete fabric of time and space was reconstituted with the acceptance of Mississippian lifeways.

MORTUARY ANALYSIS IN A REGIONAL SPACE–TIME FRAMEWORK

A narrative mode of regional mortuary analysis cast within a formal space–time framework forces us to concentrate on changes in the material record. Understanding a prehistoric symbolic system is difficult because it is not easy to ascertain the referents of the symbols. When symbols are appearing or being replaced or when the use of existing symbols is obviously undergoing modification, we may search other aspects of the archaeological record for related changes. If we accept an active role for people in the creation and use of symbols and their meanings, then we can relate their actions to their perceptions of technological innovation, demographic factors, changing resource availability, and so forth (e.g., Rosenberg 1990; but see Charles 1992a, 1994). We can then construct a multifaceted history such as Braudel (1980) would envision, encompassing specific events, social and economic processes, and climatic and environmental settings. Such an approach, in outline and as yet incomplete, has been attempted in this chapter. By focusing on the distribution of cemeteries and their contents on a regional basis and across a substantial span of time, and in terms of items and acts of mortuary ritual as symbols defining communities, mortuary studies can contribute to the construction of socially, technologically, and ecologically informed prehistories.

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Chapter 5

Landscapes and Mortuary Practices

A Case for Regional Perspectives

LYNNE GOLDSTEIN

INTRODUCTION

Archaeologists have understood the value and necessity of a regional approach for a number of years, with the application of regional studies focused primarily on settlements. However, a regional approach is equally valuable in the study of mortuary practices. I have previously argued (Goldstein 1980, 1981) that intra- and intersite spatial dimensions are critical components of mortuary analysis because of the multidimensional nature of mortuary ritual. In particular, for hierarchically organized societies such as the Middle Mississippian cultures of the eastern United States (ca. A.D. 1000–1300), it is impossible to determine the full range of statuses, burial types, or other partitions from the study of only one cemetery. However, even for cultures with less social differentiation, a regional perspective can provide important information on social organization. When the spatial dimension is extrapolated to an even broader scale—that of mortuary sites against the landscape—the interaction of settlement, mortuary practices, and land use in general can be examined.

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The focus of this chapter will be the area encompassed by the so-called Effigy Mound Tradition generally (Figure 1), and Southeastern Wisconsin specifically (Figure 2). Effigy Mound has been viewed as a distinct prehistoric culture that originated and was centered in Wisconsin, but extended into portions of northern Illinois, northeastern Iowa, and eastern Minnesota; Effigy Mound is generally dated between A.D. 650 and 1200 (cf. Benn 1979; Mallam 1976; Salkin 1987), although Hurley (1975) has argued for an earlier origin and a longer persistence. Dating is vague because there is not a large quantity of radiocarbon dates available, and those sites with dates vary considerably in their range.

Archaeologists generally agree that Effigy Mound people were semisedentary hunter-gatherers who moved in regular seasonal rounds and periodically constructed mounds. There has been some debate as to whether or not Effigy Mound people also practiced plant cultivation, but given the data available, it appears that if they practiced cultivation, it was to a very limited or minimal extent (cf. Benn 1979; Mallam 1984; Storck 1974). The most distinctive archaeological feature of this culture or tradition was the construction of mounds, and particularly mounds in the shape of animals. Mounds occur in groups, and generally include a variety of geometric and animal forms, including conical, oval, and linear mounds, and mounds in the shapes of birds, panthers, lizards, bears, turtles, and the like.

Although a number of archaeologists have examined Effigy Mound sites within the last 50 years, there is surprisingly little systematic or extensive research on the subject, and the available data have a number of problems or biases. Problems of data bias will be examined later in this chapter, but one of the reasons that the mounds have posed problems for researchers is that some do not include burials, and those that do include burials do not often include more than a few individuals; in addition, there are few artifacts found in mounds, either as grave goods or as mound fill. The relative lack of data from the mounds has caused some archaeologists to attempt to explain the reason for the "empty" or "vacant" mounds (e.g., Salkin 1976).

For approximately 15 years, I have directed an archaeological program in southeastern Wisconsin. One of the goals of that program has been to develop an understanding of the prehistoric cultures of the region based on representative and unbiased surveys. We have surveyed several areas within the region, including the completion of a more than 15% stratified random sample of an area of approximately 70 square miles. The survey area is centered around the Middle Mississippian site of Aztalan, but also includes a number of Effigy Mound sites within its boundaries. In addition, one of the richest Effigy Mound areas is immediately south of the survey area, around Lake Koshkonong (the second largest lake within Wisconsin), including 23 different Effigy Mound groups (the groups range in size from 3 mounds to nearly 80 mounds). For several years, we focused survey efforts on lands immediately adjacent to and surrounding these Effigy Mound sites.

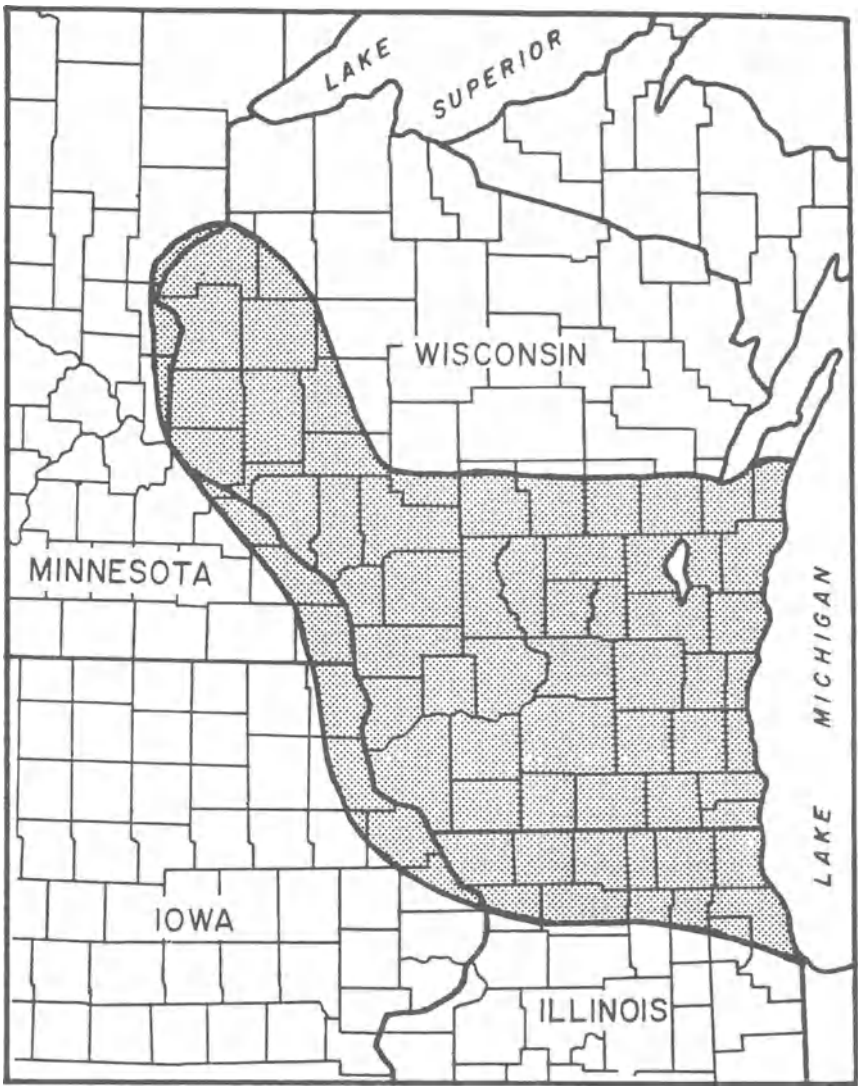

Figure 1. The geographic extent of the Effigy Mound Tradition.

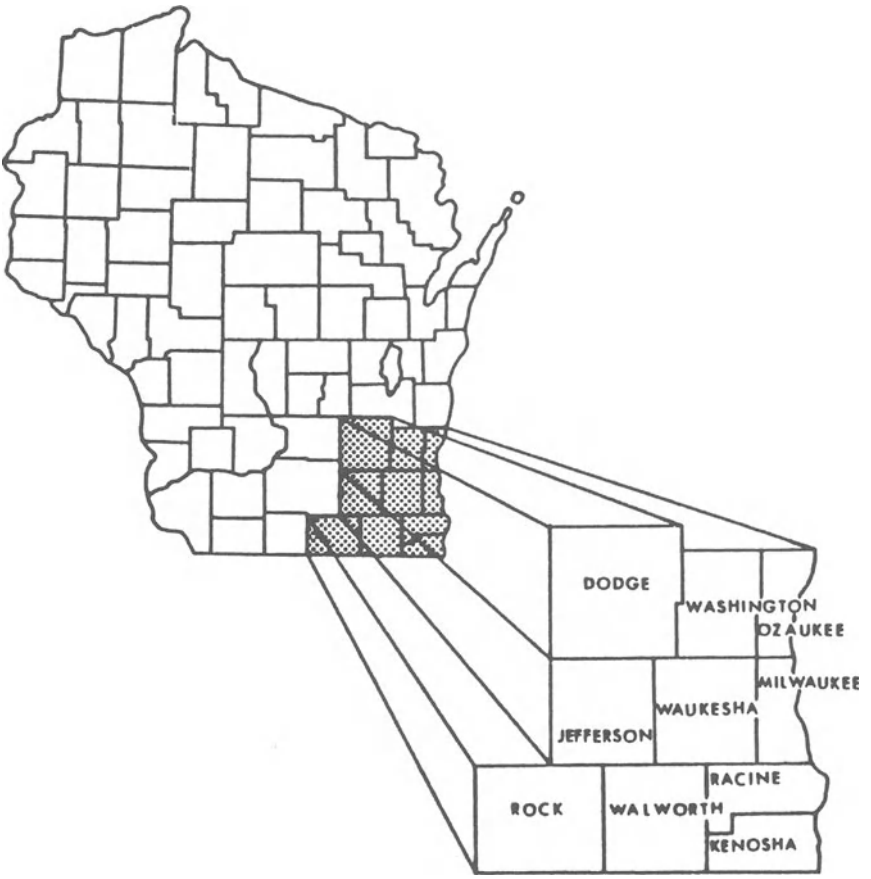

Figure 2. Southeastern Wisconsin regional boundaries.

Explanations for the presence of Effigy Mounds have ranged from a curious story at Beloit College that the college's first janitor built the mounds on campus by dumping ashes from the college's pot-bellied stoves in specific places (Bastian 1958), to more sophisticated notions that the mounds represent clan symbols, sacred spaces, or even revitalization movements (Mallam 1984:19).

This chapter uses data from three separate sets of sources: (1) an Effigy Mound literature review, somewhat abbreviated for the purposes of this chapter; (2) an analysis of a set of mound form or type data; and (3) data resulting from the stratified survey I directed in southeastern Wisconsin.

LITERATURE REVIEW

At this juncture, it is useful to review some of what we know about Effigy Mounds and their structure. Sites are "usually near zones of predictable and annually recurring natural resources" (Mallam 1984:19). There have been few unambiguously defined Effigy Mound habitation sites excavated, but it is clear that there are at least temporary habitation sites directly associated with mounds. The pottery is always Madison Ware (of several different varieties), and projectile points tend to be small, triangular, and notched or unnotched (use of the bow and arrow is thus inferred). A variety of scholars have enumerated the basic features of the mounds and associated mortuary practices, and the following is a summary of that data (based on Rowe 1956; Mallam 1976, and a variety of articles in the *Wisconsin Archeologist* reporting on specific sites):

1. Mounds are usually low (never more than 2 m high), but they are often of considerable length. Some linear mounds can have lengths of more than 100 m, although most mounds range from 20 to 50 m in length.
2. Borrow pits created in building a mound are rarely discussed in the literature; they have either not been found, or are broad in extent, leaving no discernible trace.
3. The mounds generally occur in groups—it is unusual to have only one mound. Groups may include as few as 3 mounds or as many as 100 or more, but most mound groups fall into one of three general categories: those with fewer than 10 mounds, those with around 25–40 mounds, and those with 60–80 mounds.
4. A pattern of orientation of the mounds within a group is not apparent, although the mounds will often be aligned parallel to the natural feature on which the mounds were built or other similar landscape markers.
5. There is no apparent pattern of which mound types will occur together. Conical mounds are the most commonly found, with oval and linear mounds also appearing frequently. Birds, panthers, bear or buffalo, turtles, and lizards are among the most prevalent effigy forms.
6. Construction of the mounds is not uniform from site to site, but several approaches to mound construction have been documented (cf. Rowe 1956:72). There does not seem to be a predictable pattern for which method is used in any particular case:
   a. In many instances, all or part of the soil's A-horizon is removed prior to mound construction, as if to define the aerial extent of the mound.
   b. In other instances, a so-called intaglio foundation was used; in this case, the A-horizon was removed, then excavated deeper to produce an intaglio or reverse cameo of the mound shape. The "hole" created is then filled and the mound completed.

c. Finally, in some mounds the A-horizon was not removed prior to construction; the mound was created on the original ground surface without special preparation. These mounds do not seem to be distinctive in any other way.

7. Mounds were apparently constructed using basketloads of soil from the immediate vicinity, and, in general, it does not appear that mounds were built in successive stages, but rather represent one event.
8. Mounds often contain one or more features:
   a. The most common feature is what archaeologists have called a fireplace or altar. This feature type shows clear evidence of fire, and usually includes constructions of stone. The features can appear singly or in multiples, and they often occur near burials or in prominent parts of the effigy form, such as the heart or head area.
   b. "Cists" are another Effigy Mound feature type. A cist is a "small bowl-shaped type of structure with more or less vertical walls of red, unbaked clay, reinforced to some extent with pebbles, and with a slightly concave bottom lined with stones" (McKern 1928:263).
   c. Burials or inhumations represent the third most common mound feature. Other types of features are rare.
9. Burials are either primary flexed interments, bundle reburials, or cremations. Treatment in any of these three forms may be single or multiple. There are also a number of instances of scattered bone in which burial disposition cannot be determined. Approximately 25% of the burials excavated have been primary (usually flexed) interments, about 61% have been single or multiple bundle reburials, 2% have been cremations, and the remaining 12% are scattered bone with indeterminate burial disposition. Burials may be placed in pits excavated below the mound floor, they may be placed directly on the mound floor with no pit, or they may be placed in the mound fill without a pit. Disposal types are not necessarily correlated with mound types.
10. Although nearly every mound group that has been tested or excavated has included at least one burial (cf. Riggs 1989), it is not the case that every mound includes a burial. A number of mounds have yielded no evidence of human bone, and it is unusual for mounds to have the remains of more than a few individuals. The few exceptions are the result of the presence of one or more sets of multiple (usually bundle) burials.
11. Although the number of burials in any mound is small, both adults and children are present. There seems to be roughly equal representation of males and females, and all (including children) have access to each of the disposal types indicated above. However, it should be noted that in a recent study, Ghere Paulus (1991) found that 33% of all identifiable

remains found at nonmound sites of this period were children, and males seemed to be more commonly found in these nonmound sites than females.

12. Grave goods are rare, and include an occasional pot, a pipe, a projectile point, a bone artifact, or a copper artifact. Most of the artifacts are not necessarily directly included with burials, but tend to be associated with the fireplaces or altars, or are lying on the mound floor.
13. The spatial placement of features and burials within mounds is not random; burials and associated features are often placed at the "heart" or "head" of the animal, or at the center of the mound.

In the past 20 years, three studies have focused intensively on Effigy Mound cultures: Hurley (1975) examined two Effigy Mound habitation sites, Peterson (1979) examined the reliability of recorded mound location data and the relative rate of destruction of mounds, and Mallam (1976) developed an interpretive model for Effigy Mound dynamics. For the purposes of this study, Mallam's work is the most relevant.

Mallam (1976), Benn (1979), and Storck (1974) have all suggested the possible use of the mound sites as aggregation centers. Storck proposes that people lived in dispersed groups and congregated at mound sites for ceremonial and funerary activities. Mallam (1976) proposed a more complex model of coalescence and dispersal in response to seasonal availability of resources. In Mallam's model (1976:38), the Effigy Mound complex represents the territory of a number of loosely related families who seasonally merge into a larger corporate entity. Mallam notes: "The primary purpose of the mounds was not funerary. Rather, burial was only one of many cultural activities carried out at these selected locations, and its function must be considered within the context of the multipurpose function of these mounds" (Mallam 1976:38).

In the context of Mallam's model, Benn (1979) attempts to present an addition to the model to explain why the mounds were built. He notes that he "must consider at least three aspects of mound building behavior: the motivations for constructing effigy mounds at particular locations, the reasons for the variety of mound shapes, and the internal content of the mounds" (Benn 1979:70). Using Mallam, Benn explains that mounds were placed at the intersection of the territories of several family bands or lineages; they were territorial markers, but not in the sense of circumscribing absolute boundaries. The different mound forms are seen as the "political or social symbols of the corporate group who constructed them and are buried within" (Benn 1979:71). Benn (1979:72) also argues, following Hall (1977), that the totemic function of the mounds can be expanded to include the satisfaction of "the needs of a human soul released by the physical death of an individual." Burial in an effigy mound would insure reincarnation of the soul to the same totem group.

In a later paper, Mallam (1984:19) carries these ideas farther, and concludes: "[H]umans must assume responsibility for the quality of life by respecting the environment which enhances it. If this assessment is correct, the mounds, then, are not so much burial sites as they are metaphorical expressions about the idealized state that should exist between nature and culture—balance and harmony." Mallam thus sees mound building as an ongoing world renewal ritual.

The remainder of this chapter will examine the Effigy Mound data for southeastern Wisconsin, in an attempt to determine the validity of many of the propositions and interpretations presented in the literature, and also to focus specifically on the regional implications of a mortuary analysis of the Effigy Mound tradition.

THE MILWAUKEE PUBLIC MUSEUM EFFIGY MOUND TABULATIONS

While working in the collections of the Milwaukee Public Museum, I discovered a notebook with carefully prepared forms. The forms are tabulations of Effigy Mound groups for every county with mounds in the state; the entry for each site includes the published reference, as well as information about illustrations. From the associated marginal notes, we assume that the data was prepared by W. C. McKern in the 1940s. The mound categories are standard, and the entire data set has been entered into a computer data base for future analysis. For the purposes of this chapter, I will limit discussion to the 10 counties of southeastern Wisconsin.

Use of this 1940s data set may raise questions in the minds of some, but the data should be reasonably reliable. Previous work has demonstrated that by the 1930s, especially in the southeastern part of the state, the efforts of Charles E. Brown and others resulted in the documentation of most mound groups (cf. Goldstein 1983). Few new mound groups have been recorded since that time, although such groups are occasionally discovered. While specific site maps may have errors in orientation or specific location, this particular data set does not include such details. Finally, to test the relative accuracy and consistency of the categorization, a sample of entries was examined in detail and was found to be accurate and acceptable.

Although there are 10 counties within the southeastern Wisconsin region, only seven of those counties are included in most of the analyses here; Kenosha, Ozaukee, and Washington counties have too small a sample size—there are many fewer mounds and mound groups in these counties. One further limitation of the sample must also be stated: only effigy mounds are included—that is, only mounds made in the shape of animals. This was done because of time constraints and because the system McKern used to record geometric and other mounds has

not yet been checked. The counties are presented in the following figures, and are generally ordered from west to east.

Figure 3 compares the number of effigy mounds to the total number of mound groups in each county. It is obvious that Dodge, Rock, Waukesha, and, to a lesser degree, Jefferson counties have mound groups with a considerable number of effigies per group. The other counties have fewer groups with fewer numbers of effigies per group. Dodge, Jefferson, Rock, and Waukesha counties are contiguous (see Figure 2) and are on the western edge of the region.

The differential distribution of effigy forms has been debated in the literature for many years. If the effigies represent totems or totemic symbols, one would not expect to find them equally spaced across the landscape. Figure 4 indicates the distribution of the most commonly occurring effigy mound forms by county. Note that the distribution of mound forms is different in each county, with variability represented in each, and the dominant types differing in each case.

Figure 5 adjusts these data for the relative number of mounds; the percentage of the most common forms in each county is represented. Birds seem to be present at the same relative levels (except in Racine County), while turtles are clearly prominent in Waukesha County, and to some extent in Walworth County. In a complementary fashion, panthers predominate only in Milwaukee and Racine

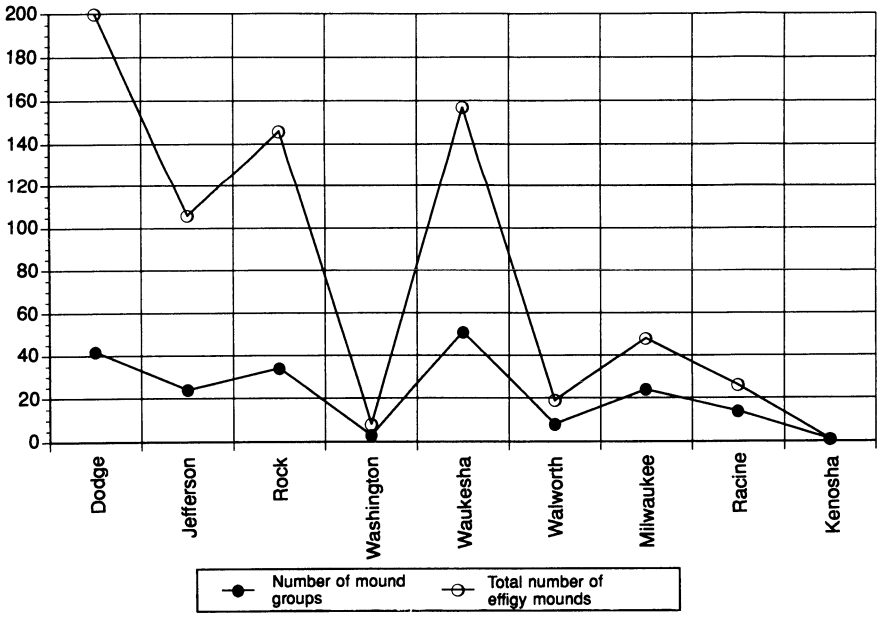

Figure 3. A comparison of the number of effigy mounds to the total number of mound groups in each county.

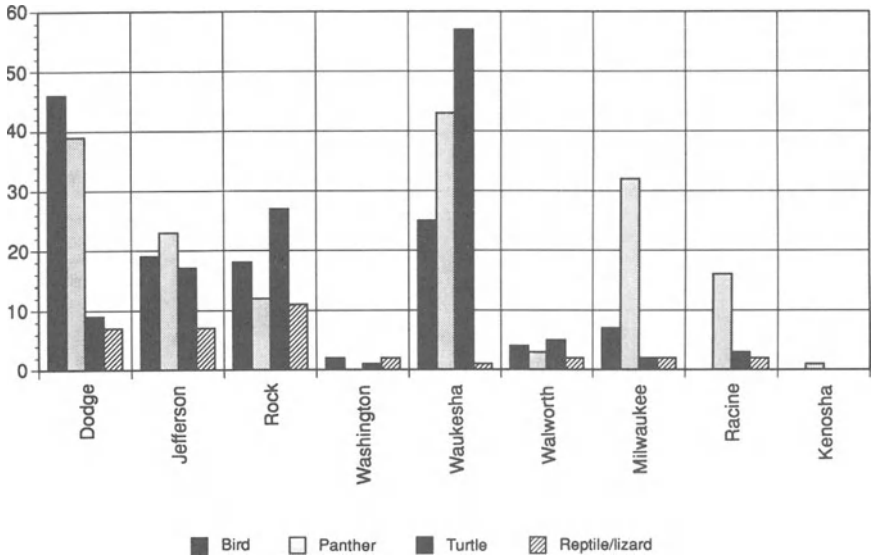

Figure 4. The most commonly occurring effigy mound types, arranged by county.

counties. These same data are presented in a somewhat different fashion in Figure 6—a county-by-county "profile" for the relative occurrence of each mound type. The charts are placed in relative geographic order for ease of comparison. Interestingly, the figure shows a decrease in heterogeneity as one moves from west to east. Each of the three counties in the westernmost column have a diverse set of mound forms. In the next column, turtles predominate, although other forms are present in some numbers. In the eastern set of counties, panther mounds are the clear favorite, with much less variability. This clinal or zonal pattern will be more closely examined in a subsequent section of this chapter.

THE SOUTHEASTERN WISCONSIN ARCHAEOLOGICAL PROGRAM DATA

The data in this section come from an extensive and intensive regional survey. The survey used a stratified random sample, and was intensive in coverage (project is summarized in Goldstein 1987). The distribution of sites in the region followed a series of clearly identifiable patterns.

Southeastern Wisconsin is rich in potential food resources and, in particular, in wetland resources. Wetlands are most productive for food in the fall and winter when food elsewhere is in shortest supply. In addition, wetlands provide storable

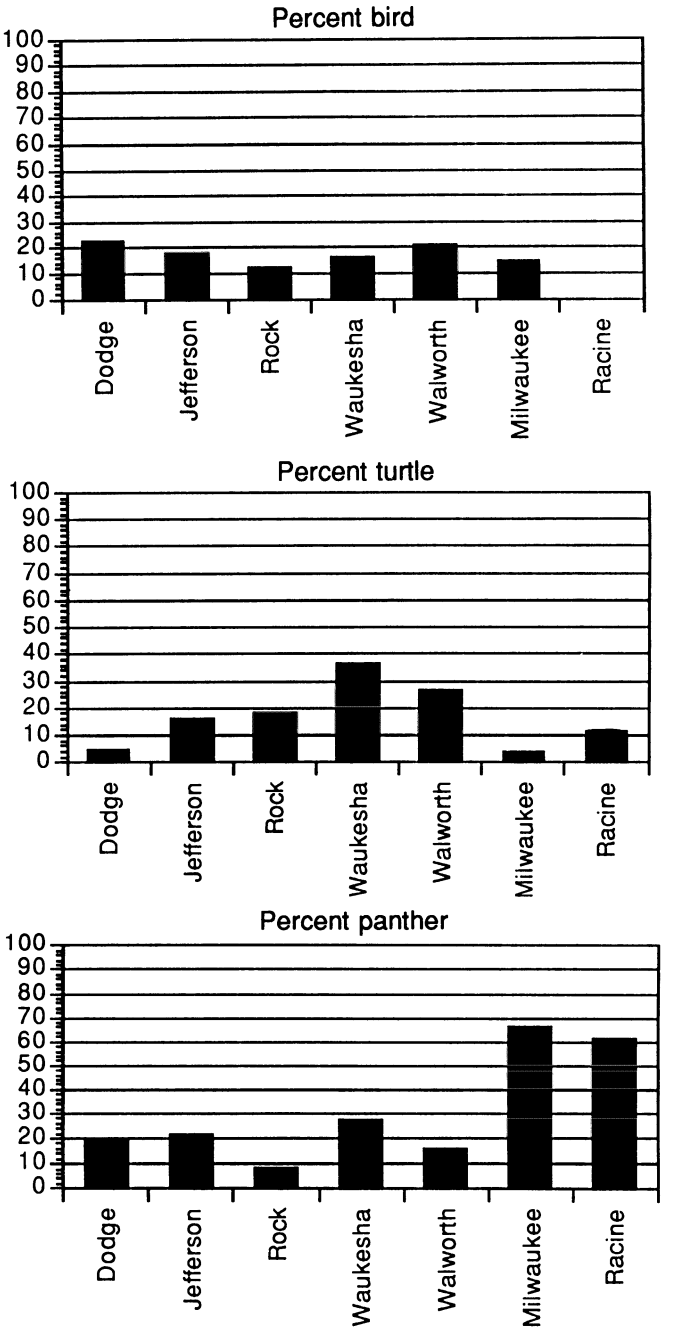

Figure 5. The percentage occurrence in each county of the three most commonly occurring effigy mound types.

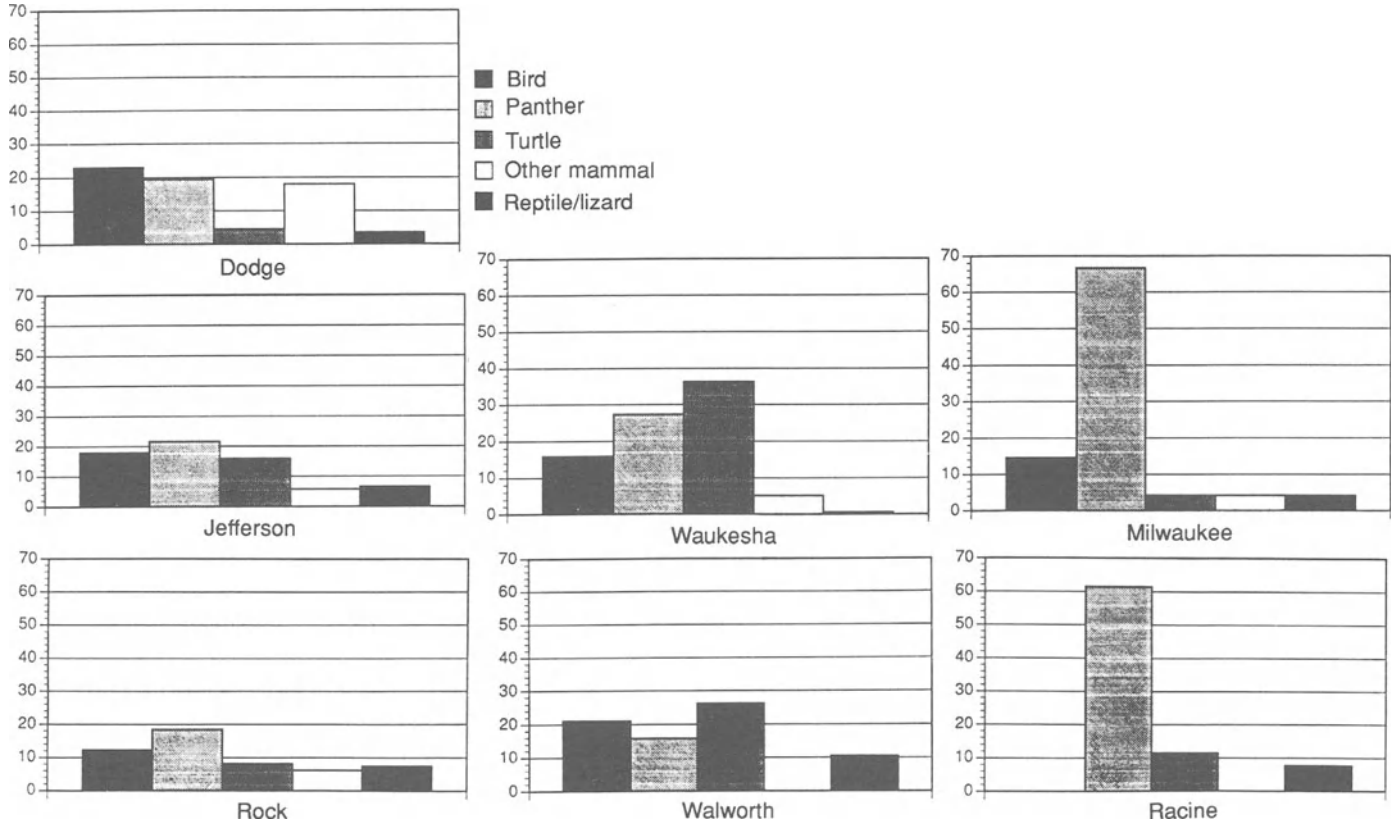

Figure 6. Mound type "profiles" for counties in southeastern Wisconsin. (Graphs arranged geographically; Kenosha, Ozaukee, and Washington counties omitted because of sample size limitations.)

food resources that are rich in nutrients. Permanent wetlands (swamps and marshes) will often yield rich food resources when resources in other zones may be temporarily depleted due to, for example, severe climatic conditions such as droughts or cold weather. The survey data indicate a clear preference for site location in areas adjacent to wetlands, but the presence of wetlands alone is not a sufficient predictor of site location.

The number and pattern of stream confluences, as opposed to simply the presence of streams, is also an important factor in understanding site distributions. Most sites have many confluences in their immediate vicinity, but the larger sites have many primary confluences surrounding them. The data strongly suggest that sites are located at the intersection of marsh, oak forests, and oak openings; these sites are often situated on end and ground moraines with wetlands within 0.5 km. This association is significant since this combination is not the most common vegetation set for the region overall.

Effigy Mound sites tend to occur along major rivers and streams, especially on high ground at the edge of major wetlands and lakes—that is, they are almost exclusively in marsh–oak settings. The number and location of Effigy Mound sites within the region may be an indicator of a seasonal aggregation–dispersal pattern. If people are dispersing for the winter to exploit the marshes, then gathering again in spring–summer to collect in larger villages, groups may meet at these mound groups just before winter dispersal and/or just before spring aggregation. The mounds may serve as a place to meet and/or keep track of who is where; their location would represent a rich resource base, and a logical place to wait for and meet others.

The distribution of mound sites within the region (Figure 7) illustrates the clarity of the pattern, and the distribution of mound sites with effigy forms (Figure 8) tends to focus on those areas with concentrations of large marshes and large numbers of mound groups. In the previous section, I noted that there was a decrease in heterogeneity of mound forms as one moved from west to east; this pattern follows the differential diversity of resources across the region—while the entire area is rich in resources, the greatest diversity is present in the western portion of the region. In addition, the largest numbers of effigies are present in the most diverse portions of the region.

CREATING A BIGGER PICTURE

The examination of a presumed mortuary site type across a region provides us with several sets of data from which to develop a model. The locational and physiographic data suggest a pattern of placement made to emphasize certain rich resources, and also suggest that mound sites may represent seasonal aggregation and/or dispersal centers for groups of families.

The differential distribution of effigy types lends some credence to the notion

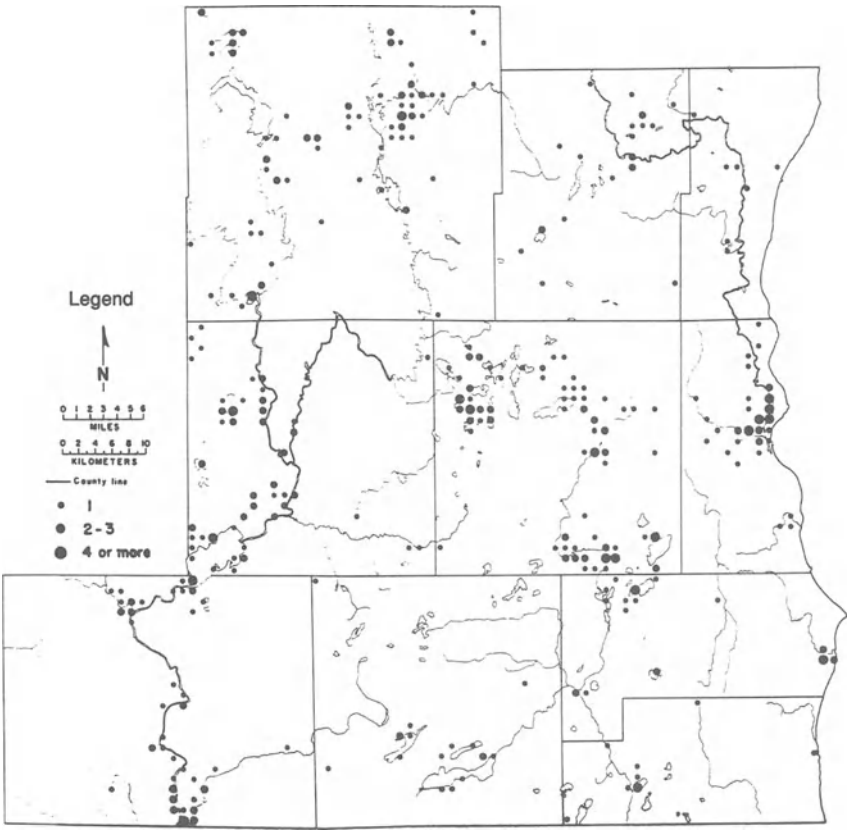

Figure 7. The distribution of mound groups in southeastern Wisconsin.

of mounds as clan symbols or corporate group symbols. The mounds must represent more than this, however, since the conical, linear, and oval forms are present in large numbers. While any particular mound may have been constructed as a single event, it is unlikely that all of the mounds in a group were constructed at one time. The groups with large numbers of mounds may simply represent longer use of the site over time.

The mortuary data indicate no particular differentiation of status, although one might argue that the sparse pattern of burial suggests that only a small portion of the population is being buried in the mounds. Nonetheless, there does not seem to be a differentiation based on age or sex, and grave goods tend to be associated with the mound, rather than with a particular individual or burial. The nature of the disposal types suggests that interments are not generally primary; in addition

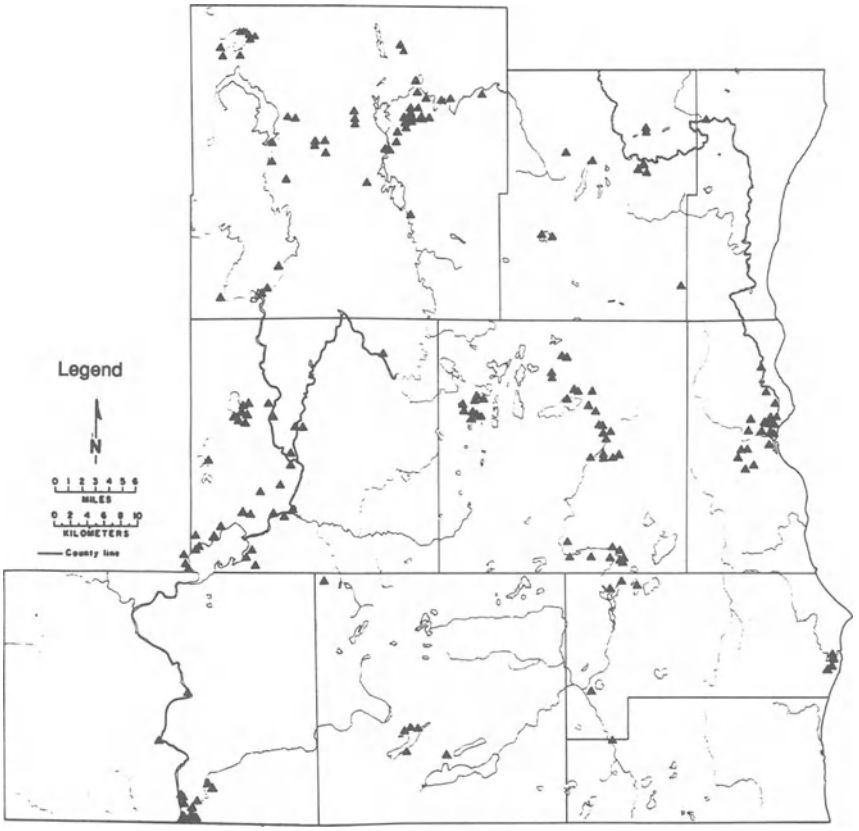

Figure 8. The distribution of mound groups with effigy forms in southeastern Wisconsin.

to the popularity of bundle burials, the excavating archaeologist often notes that the flexed interments seem so tightly flexed that they may have been bound and reburied from another location (e.g., Bastian 1958). The scattered bone may represent the remnants of another form of mortuary processing, and the number of multiple burials also suggests that placement in the mounds may be something other than primary interment. The overall patterning supports the notion of the mounds as aggregation points, with people bringing burials because of who the individual is (vis-à-vis the group) or because of when the individual died. Given the lack of differentiation present in the disposal types, time of death may be the factor in determining whether or not someone is buried in a mound. However, the secondary nature of the disposal indicates that keeping track of that individual or of that individual as a symbol for something else is of critical importance. The

nature of the disposal patterning suggests an organization where group identity is favored over individual differentiation.

In another paper (Goldstein 1989), I note that secondary disposal results either because of the group to which an individual belongs, or because of the circumstances of the individual's death. If group circumstances indicate secondary treatment, there should be a clear pattern of disposition. If secondary treatment is the result of individual circumstances of death, the form of the disposal may be similar to that of others, but the remains themselves will be bundled or disarticulated or otherwise differentiated.

The pattern of secondary disposal seen in effigy mounds is clearly that of group identity. There is clear pattern in placement, structure of the mounds, and treatment. In discussing secondary disposal, I (Goldstein 1989) have noted that if group identity is the focus, one should find: (1) some form of group facility; (2) that the treatment follows a primary form of disposal that results in disarticulation; and/or (3) there is ancestor worship represented by the handling and marking of remains. If only a particular group is afforded secondary treatment, these individuals most likely represent specific statuses or ancestors of a particular category.

These patterns fit Effigy Mound society well. The group facility is the mound, and the sparsity of burials may indicate secondary treatment for only a particular group within the society. The other finding that is relevant here is that there is a correlation between secondary treatment and settlement fixity; this may relate to the regular use and reuse of disposal facilities associated with secondary treatment based on group circumstances, or it may indicate the importance of particular locations or settings.

We may never know the actual purpose or purposes of the mounds, but it may be most instructive to think of them as artifacts in themselves, rather than as mortuary sites. As artifacts, the notion of "vacant" or full is moot, and the emphasis is placed on the physical mound, its particular characteristics, and its placement in terms of other mounds and in terms of the landscape. The placement of mounds in relation to each other has not been addressed in detail, although a number of individuals have recently focused their efforts on trying to relate mound orientation to significant astronomical phenomena; thus far, the results have on occasion been suggestive, but not unambiguous (e.g., Scherz 1990a,b; Steckel n.d.). Similarly, the notion that the mounds simply follow the natural contours of the landscape (cf. Rowe 1956) is also inadequate.

An example may help to clarify the issues. Lizard Mound Park in Washington County is an excellent example of an Effigy Mound site. There were originally nearly 50 mounds in the group, with a variety of effigy forms included (two birds, a number of panthers, and a lizard). Figure 9 is a map of the site as it appears today. While there seems to be some structure in the placement of the mounds, the pattern is not clear, and does not seem to follow any natural or astronomical phenomena. Pairs of mounds of similar types occur in several instances, but even

Figure 9. Lizard Mound Park (the Hagner mound group).

these pairs are placed differentially. Lizard Mound has also baffled students because its location does not appear analogous to other Effigy Mound sites. While it is on a relative high spot of land, it does not appear to be distinguished from any other spot.

If we look at the site in a larger context, the location begins to make sense, and at least one alternative explanation is suggested. Figure 10 is a map of the location of Lizard Mound Park in relation to its environment. In particular, Figure 10 focuses on features found to be important in site location determinations. From this perspective, it is quite clear that Lizard Mound is on an island in the middle of a large set of wetlands and a number of streams, lakes, and creeks. This location places the site in the middle of some of the richest resources in the general area. Why place a mound group here? Shouldn't the habitation site be here instead?

In a context focused more specifically on the nature of postmodernity and on cities and modern environments, Harvey (1989) examines the meaning of space in cultures and over time. In particular, using anthropological and other data, he challenges the idea of a "single and objective sense of time and space, against which we can measure the diversity of human conceptions and perceptions" (1989:203). The concept of space is varied, and is created for any individual society "through material practices and processes which serve to reproduce social life" (1989:204).

Harvey's ideas are not new to anthropology, and I would like to use these ideas to suggest that one of the reasons that we cannot determine the nature and function of Effigy Mound sites is because we have examined them from the wrong perspectives, partitioning them into particular categories and ignoring the whole—we have treated them as mortuary sites, we have treated them as astronomical markers, we have treated them as symbolic totems, and we have treated them as territory markers. While it is likely that they may represent all or some of these things in some context, we have to place them all against the social and physical landscape to provide an overall context.

As an initial attempt to provide that overall context, I suggest that in some sense Effigy Mound sites represent maps. Perhaps not maps in the conventional sense of the word, but symbolic representations of both form and space to the people who built and used the mounds. The different orientations of individual mounds, for example, may represent indicators or pointers to resources controlled by a particular group. The pairs of mounds might represent intra- or intergroup relationships, but might also indicate direction of resources or types of resources. We may not be able to completely read the map with our particular Western orientation, but we can see the regularities, and a map to resources or resource ownership provides a framework within which to place the remainder of the data, without stretching for new theories or directions. In the data presented for southeastern Wisconsin, for example, bird effigies appear everywhere, although they are more common in the western counties. This distribution coincides with

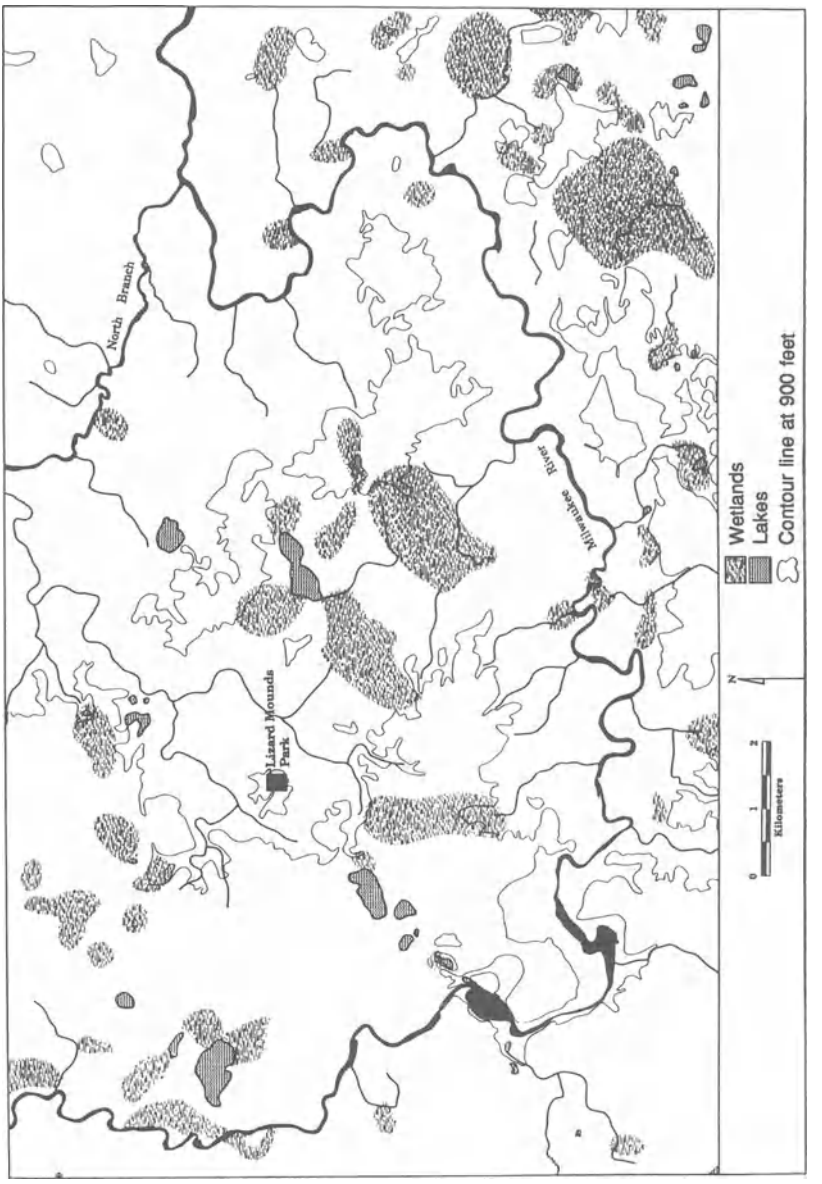

Figure 10. The location of Lizard Mound Park (47 = W+ = 001; the Hagner mound group) in relation to the surrounding environment.

the path of the Great Mississippi Flyway, a bird migration route. Similarly, the distribution of turtle mounds also coincides with more diverse wetland areas. Within a mound group, the number of different types of effigy forms may represent not only clan or corporate groups, but also diversity of resources. The largest and most diverse mound groups are consistently located adjacent to the largest and most diverse wetlands—Dodge County, home of the extensive Horicon Marsh, is perhaps the best and most obvious example. Dodge County has the largest number of effigy mounds, and most commonly has animal forms that are associated with wetland settings. The earlier discussion of secondary disposal and settlement fixity may well relate to the placement and importance of these mounds against the landscape.

The study of Effigy Mound groups as maps will take more detailed analysis than is possible here. However, just as maps today are used to represent a variety of different aspects of social life (everything from the distribution of religious beliefs to opinion polls, political parties, highways, recreation, and natural resources), viewing mounds as maps allows us to place seemingly disparate and even conflicting interpretations together into a framework that may eventually allow us to reconstruct the conception of space and, by extension, social organization for these people.

Even when social differentiation is not present, a regional approach to mortuary analysis can provide a new perspective for interpretation, and possibly an overall framework or context for understanding. Separating the mortuary site and its analysis is sometimes the best way to lose perspective. Further, as shown here, separating the mortuary site from the rest of the culture is a mistake that even a regional approach will not resolve.

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Part III

Identities and Boundaries

The previous chapters focused on the mortuary site as a component of the archaeological landscape with an emphasis on the geocultural placement of burial sites. The chapters that follow continue the theme of regional focus in a different manner. In these analyses the individual, not the site, is retained as the primary unit of analysis with the patterned treatment of all dead from a site as the comparative unit of analysis.

In these models the focus is placed on the consistency with which both specific burial treatments and normative patterns of burial treatment are represented in multiple sites across a region. This view also looks at differences in specific and patterned treatments between regions and examines the extent to which mortuary analysis can be utilized to detect cultural boundaries between adjacent areas. Again, on the regional level mortuary analysis is not presented in isolation but in conjunction with other approaches to subsistence-settlement research.

In landscape analysis one of the critical areas of examination is the location of mortuary sites relative to the cultural and natural landscapes. In an analysis focused on identities and boundaries it is regional patterns of access and exchange of material culture that is perhaps more central to the interpretative models. Mortuary research on identities and boundaries offers a new tool for examination of the spatial and temporal extensions of specific archaeological complexes and for regional models of social organization.

Chapter 6

Mortuary Custom in the Bronze Age of Southeastern Hungary

Diachronic and Synchronic Perspectives

JOHN M. O'SHEA

INTRODUCTION

There can be little question that the publication of SAA Memoir number 25, *Approaches to the Social Dimensions of Mortuary Practices* (Brown 1971), represented a major turning point in the way archaeologists view funerary remains. Prior to this time, the analysis of cemeteries tended to be the domain of the "sensitive" (those who sought a transcendental "nearness" to past societies through their dead) and the taxonomist, who sought to build chronologies through the seriation of grave lots. The promise of that (now far off) symposium was not just the potential to "dig up a kinship system" (Binford 1972:8), but the possibility that the unique kinds of evidence present in funerary contexts could provide the basis for a truly anthropological archaeology.

Yet, despite the promise of those original studies, and very real advances in the application of archaeological mortuary theory, mortuary studies have not lived up to their broader potential. The incredible richness of the funerary context has all too often been ignored in the single-minded rush to detect "ranking" and to

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assign past societies to particular culture-evolutionary slots. This narrowness of purpose has, in turn, fostered an emphasis on the analysis of single mortuary sites.

While a focus on single sites is understandable in practical terms, it has serious and inherent weaknesses. Among them, the single-site approach (1) artificially isolates mortuary activities from other aspects of the society, including alternative mortuary programs; (2) has difficulties in distinguishing "significant" from "idiosyncratic" patterns of mortuary differentiation (particularly in the case of infrequently occurring categories); and (3) provides no control for temporal effects. This latter deficiency is particularly important since it necessitates a "static" analysis of mortuary activities. Such analyses are susceptible to distortion from unrecognized temporal change in funerary activities and, conversely, they are unable to consider the historical trajectory of which the cemetery forms a part.

In addition, the sample requirements for plausible (and statistically relevant) analysis are such that only the largest and best documented sites can be used. As such, one often is forced either to disregard the much more common, but smaller or poorly documented sites, or to conduct analyses on data that are hopelessly inadequate for the questions one seeks to address.

The narrowness of the research goals and these methodological limitations combine to undermine the archaeological usefulness of many mortuary studies. Only rarely are the results from such social analyses applied in parallel lines of archaeological inquiry. Once the smoke has cleared, and the analyst announces that evidence for "ranking" has been found, the study is duly filed and "normal" archaeological research continues on as before.

If mortuary studies are to live up to their early promise, they must be reintegrated into the general study of culture in the past. Funerary activities must be perceived as significant and dynamic elements in the social life of communities that influenced and in turn were acted upon by the political, economic, and environmental realities of the society. As such, the study of mortuary remains must be integrally linked to the analysis of other archaeological contexts, be they other cemeteries, settlements, special extractive sites, or whatever. At the same time, the activities and symbols invoked in the treatment of the dead must also be seen as elements with their own distinct historical trajectories, which are both meaningful and accessible to rigorous analysis.

It is in this reintegration of mortuary studies that the region, as a unit of analysis, is useful. As employed here, the term *region* is used as a shorthand for a hierarchy of social and spatial scales over which cultural behavior is meaningfully organized (in the past) and understood (in the present). As such it establishes a framework within which synchronic and diachronic approaches can be combined, while also providing informed and credible boundaries for comparative study.

Analysis within a regional framework may operate on numerous scales, incorporating both mortuary and nonmortuary contexts. Contrasts between

settlement and mortuary contexts, for example, may be used to assess the consistency with which social distinctions, recognized in death, are expressed within the life sphere of the community. Alternatively, the age and gender associations of material culture, expressed through mortuary symbolism, may be used to evaluate the organization of activities in other settings (see J. Chapman 1983; O'Shea and Ludwickson 1992). The analysis of sets of mortuary sites both as multiple occurrences of the same type (e.g., a series of related cemeteries) (see R. Chapman 1981; Pebbles 1971) and as a range of known (or sought) alternative mortuary contexts (see Tainter and Cordy 1977) is another obvious focus. While both lines of research are important, the emphasis in this chapter is on analyses that incorporate multiple mortuary sites.

The concurrent analysis of multiple mortuary samples fixes funerary activities and related material remains within a temporal and spatial context. This provides a more complete (and theoretically consistent) representation of past mortuary programs and, as such, is a more reliable basis for understanding the social implications of observed mortuary differentiation (see O'Shea 1984). It is also a natural starting point for the investigation of cultural, political, and economic integration across both space and time.

Methodologically, the multisite approach provides a means for distinguishing categories of differentiation that represent intentioned, region-wide patterns (even among infrequently expressed social statuses) from those that are idiosyncratic or site specific. It can also increase the usefulness of small or incomplete archaeological samples by allowing their qualitative characteristics to be viewed in light of larger and better documented sites in the region.

Another important consequence of this approach is that it frees the research from the constraint of "static" assumptions concerning the character of mortuary behavior in the past. There is no need to assume a priori that mortuary custom is necessarily static or conservative, since the temporal characteristics are themselves accessible to investigation in their own right. Such diachronic research can provide not only the basis for a "historical" understanding of the materials under investigation (see Morris 1987; Roymans 1990) but also the groundwork for a rigorous analysis of the use and manipulation of mortuary symbolism in the past (see Deetz and Dethlefsen 1971).

At larger scales, a regional approach enables funerary symbolism and categories of social differentiation to be contrasted across cultural boundaries. Given the common use of funerary rituals as occasions for reasserting the character of social relations (see Metcalf 1981), and the use of mortuary localities as markers of territorial or resource claims (Goldstein 1976), contrasts between neighboring and contemporary groups can be striking. The presence (or absence) of such funerary contrasts across space, and the degree to which mortuary activities coincide with other evidence of cultural or environmental boundaries can provide insight into a

broad range of issues, such as subsistence, trade, and ideology, as well as into the political character of the boundaries themselves (see Bradley 1981; Randsborg 1974).

Having briefly raised these issues I now turn to a series of examples to illustrate some of these elements of regional analysis. The discussion focuses on the cemeteries of the Maros Group, an Early and Middle Bronze Age cultural manifestation found in southeast Hungary and adjacent portions of Yugoslavia and Romania.

BACKGROUND TO THE MAROS GROUP

The Maros Group (Banner 1931; Tasić 1972), often termed the Szöreg Group (Bóna 1975) in the Hungarian literature (after the large cemetery site Szöreg C) or the Periam-Pecica Culture in the Romanian literature (Sandor-Chicideanu and Chicideanu 1989), is an Early and Middle Bronze Age culture that dates to the period 2500 to 1700 B.C. (calibrated) (O'Shea 1991). The distinction between the Early and Middle Bronze Age, which corresponds to the division between the early and late phases of the Maros sequence (Szöreg 4–5 in the Bóna ceramic chronology), occurs around 1800 B.C., and is accompanied by the appearance of new "baroque" ceramic styles, Middle Bronze Age metal types, and the abandonment of many of the Maros settlements and cemeteries, particularly those in the more easterly portion of the Maros distribution (Bóna 1975:27).

The sites of the Maros Group are found in the marshy and flood-prone zone at the confluence of the rivers Tisza and Maros and in areas adjacent to these two rivers to the south and east. No fewer than five major, long-lived settlements are known, along with numerous smaller and more ephemeral satellite settlements scattered throughout the area. In addition to settlements, at least seven major inhumation cemeteries have also been documented (Figure 1).

The Maros cemeteries are relatively well known and have been the subject of numerous excavations. The largest among these are the cemeteries at Mokrin in Yugoslavia (Girić 1971), containing more than 312 interments, and Szöreg C, which contained at least 229 burials (Foltiny 1941a). Smaller cemeteries include Deszk A (Foltiny 1941b), Deszk F (Foltiny 1942), Ószentiván (now Tiszasziget) (Banner 1928, 1929), Pitvaros, and Óbéba (now Beba Véché) (Bóna 1965), among others. In addition to formal cemeteries, scattered or individual burials associated with the Maros Group have been encountered in or near a number of settlements, including those at Klárafalva, Kiszombor, Rábé, and Gorzsa.

For the purpose of presentation, I first will briefly describe Maros mortuary custom as represented at Mokrin, the largest and best documented of the Maros cemeteries. From this starting point, variation in the mortuary program will be assessed across the Maros cemeteries, with an emphasis on several of the more

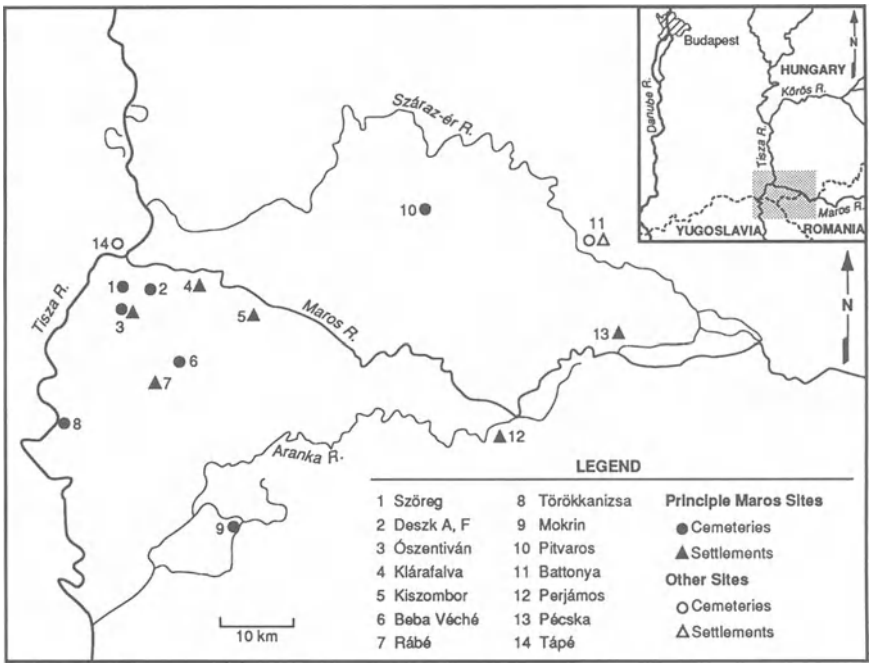

Figure 1. Location of principle Maros settlement and cemetery sites in Hungary, Yugoslavia, and Romania.

central social categories and material symbols. The Maros mortuary complex will then be contrasted with funerary programs of contemporary groups beyond the immediate bounds of the Maros group, and with earlier and later mortuary occurrences from the Tisza–Maros region.

MORTUARY TREATMENT OF THE MAROS GROUP

The treatment and disposal of the dead at the Mokrin cemetery served to distinguish a broad range of crosscutting social categories, and is particularly notable for the extremely low level of deviation permitted in the rules governing appropriate burial treatment.

The basic treatment received by most members of the Maros communities was single, primary inhumation within a community (or multicommunity) cemetery. One exception to this rule concerned infants (less than four years of age), who are rarely found in the cemeteries. A number of infant burials have, however, been recovered under floors and in midden areas within Maros settlements, suggesting

that such burial was a regular alternative treatment for infants. While such treatment is qualitatively different from interment in the community cemetery, that infants were buried with grave offerings (as at Kiszombor Új Élet; O'Shea n.d.) emphasizes the fact that these represent intentioned burials and not casual or unimportant disposals. At least one other category of person was not buried in the cemetery; younger adult males (20–30 years). Individuals of this age occur in much lower proportions than would be expected in a normal demographic profile (see Farkas and Lipták 1971). Their absence probably is indicative of death away from the settlement. Evidence of defensive works on some of the Maros settlements and the occurrence of trepanation support an assertion that warfare was significant.

Among those individuals buried within the community cemetery, strict rules of body placement and orientation were observed with regard to an individual's gender; males were buried on their left side with their heads to the north, females on their right side with their heads to the south. As such, all individuals faced toward the east. The plan of the cemetery exhibits a strong linear component that has plausibly been linked, on material and biological grounds, to the representation of a series of family or lineage groups (Lengyel 1972).

While body placement and orientation marked a series of very basic social distinctions, grave artifacts followed similarly strict rules of occurrence and combination, and served to mark a number of more limited distinctions. The Mokrin grave offerings can usefully be categorized as major social markers, body and dress ornamentation, small tools, food offerings, and ceramics (Table 1). These artifacts marked several craft specialties and served as indicators of corporate (and personal) economic standing. They also marked a series of positions of social and political authority. Among the items termed major social markers are daggers and axes (of copper or stone) for men, bone needles and beaded sashes for women, and composite head ornaments (worn by both men and women). Among the social statuses represented by these markers at least two—head ornaments and beaded sashes—were hereditary in their distribution, although the actual holding of the position required adult standing. When a child destined for one of these ascriptive positions died, the badge of office was placed in the grave, but was not "worn" by the deceased. A good example of this can be found in the case of the adolescent male in Grave 16 at Mokrin, in which an elaborate composite head ornament was placed at the child's feet (Girić 1971:46–48).

Body and dress ornaments emphasized exchanged items and included copper and bronze neck rings, pins, bracelets, hair and finger rings, and strung necklaces of shell and faience. While these artifacts appear to have represented items of high economic value (none being locally produced), they nevertheless occurred only in the quantities that an individual would wear in life (i.e., there was no individual accumulation of wealth markers). They also followed strict age and sex rules of occurrence and combination; only adult females wore copper

Table 1. Artifact Distribution in the Mokrin Cemetery

	Sex	Age	Spatial pattern	Number	Percent[a]
Major social markers					
Dagger	Male	Adult	Yes	6	9
Axe	Male	Adult	Yes	5	7
Head ornament	Male	Adult	Yes	15	21
Sash	Female	Adult	Yes	10	10
Bone needle	Female	Adult	Yes	13	13
Head ornament	Female	Adult	No	37	37
Trade wealth indicators					
Copper ornament	—	—	No	50	18
Necklace	—	—	No	65	23
Other markers					
Small tools	—	—	No	14	5
Food offering	—	—	No	17	6
Ceramics	—	—	No	179	64
No grave artifacts	—	—	No	57	21

[a]Percentage of indicated demographic subpopulation or total site sample.

pins, only adults wore neck rings, and adults tended to possess heavier multicoil bracelets while children wore single-coil bracelets and hair rings. The occurrence of necklaces was not prescribed by age or sex.

Food offerings and small tools occurred in relatively low frequencies, and were not strongly associated with either markers of trade wealth or major symbols. Mortuary ceramics, by contrast, were much more general in distribution, although not universal, and do not resolve into distinct sets that can be associated with particular age or sex divisions. Finally, a full 20% of the Mokrin mortuary population was interred without any observable grave offering.

Due to its large size and careful documentation, a great deal can be determined about the mortuary program and the likely social implications of mortuary differentiation at the Mokrin cemetery. Yet, on the basis of this sample alone, it is difficult to know whether these patterns and their social implications are general to the Maros Group or whether they are unique to the Mokrin cemetery.

To study the regional patterns of Maros mortuary and social differentiation, one must first consider how normative and alternative mortuary treatments are distributed across the Maros cemeteries, and then how the major status distinctions are likewise represented.

The normative funerary treatment—single, primary interment of individuals in a flexed posture facing east with the body orientated along a north–south axis—is shared by all the Maros cemeteries and represents the principle set of indicators by which the Maros cemeteries are behaviorally distinguished from other contemporary groups in the region (see below). Yet, there are exceptions, both in terms of

those individuals not buried in the community cemeteries (minimally young infants and those who, through dying at a distance from the community, are not available for burial), and those who, while buried within the cemetery, are accorded specific nonnormative treatments.

The distribution of nonnormative treatments represented in the cemeteries is summarized in Table 2. These alternative treatments include graves facing west (rather than east, which also resulted in the body being placed on its "opposite" side in order to preserve the correct orientation for the individual's gender), cremation, symbolic graves (graves with normal sets of offerings but that contain no human remains), and multiple interments. In addition, Table 2 also includes other aspects of body preparation or placement that, while not strictly alternative treatments, nevertheless are of similar interest in reflecting additional or nonnormative treatments; these include the occurrence of trepanation (which in the literature of eastern Europe is often equated with the treatment of head wounds; see Bátora 1990; Farkas and Liptak 1971:258), the mutilation of the hands and feet of the dead, and the abnormal placement of major social markers. This final characteristic is particularly interesting in that it represents the intentional breaking of normative rules that place clothing or body ornaments in their normal "worn" position.

From Table 2, the occurrence of various nonnormative traits seems strongly linked with the size of the mortuary sample ($r = .91$); that is, the larger the sample, the greater the number of alternative treatments observed. The table suggests, however, that these alternative treatments, while infrequent, were themselves structured and regular in their occurrence across the Maros cemeteries. This regularity even extends to the conventionalization of symbolic "rule breaking" in the mortuary treatment.

Table 2. Maros Alternative Funerary Treatments

	Mokrin	Szöreg	Deszk F	Deszk A	Ószentiván	Pitvaros	Óbéba
West facing burial	+	+	+	+	+	+	—
Cremation	+	+	—	+	—	—	—
Symbolic grave	+	?	—	+	+	+	—
Multiple burial	+	+	—	—	—	+	—
Mutilation	+	?	?	?	?	?	?
Trepanation	+	+	+	—	—	—	—
Out of position Status markers	+	+	+	—	—	—	—
Number of intact cases	278	179	57	49	29	34	15

The table also highlights the importance of high-quality osteological evidence. The potential significance of body mutilation among the Maros communities cannot on present evidence be determined, as the critical osteological specimens have long since been discarded. While in this instance, the deficiency is the result of short-sighted museum curators in the 1930s and 1940s, it is rapidly becoming the norm in North America, and represents a political expediency that will be deeply regretted.

A similar assessment of the regional representation of the major social markers from Mokrin is presented in Table 3. These include three markers of male distinction: axes, daggers, and head ornaments; and three female markers: sashes, bone needles, and head ornaments. While the number of different markers present in each site is again related to sample size ($r = .83$), there is broad consistency in the representation of major status markers, particularly the head ornaments and bone needles. Yet, consistency in the occurrence of these markers is only half of the story, since it overlays a second level of variability concerning the manner in which the items are actually used and combined within the mortuary programs.

The Maros head ornaments, for example, occur in two distinct varieties: those with spectacle wire pendants and tubular copper plaques (type 1), and those with flat copper "buttons," often with beads from the snail *Columbella rust.* (type 2). While head ornaments are found in all of the Maros cemeteries, the particular varieties exhibit a distinctive pattern of distribution both within individual cemeteries and between cemeteries within the region.

When these ornament types are plotted across the Maros cemeteries (see Figure 2), only type 1 ornaments are found at Pitvaros and Óbéba (the two most easterly sites), while at Deszk A and the large Szöreg cemetery (in the western portion of the Maros territory) only type 2 ornaments are found. Both ornament

Table 3. Major Social Markers in Regional Perspective

	Mokrin	Szöreg	Deszk F	Deszk A	Ószentiván	Pitvaros	Óbéba
Male status marker							
Axe	+	+	—	+	—	—	—
Dagger	+	+	+	+	—	+	—
Head ornament	+	+	+	+	+	+	+
Female status marker							
Sash	+	+	+	—	+	—	—
Bone needle	+	+	+	+	+	+	+
Head ornament	+	+	+	+	+	+	+
Number of intact cases	278	179	57	49	29	34	15

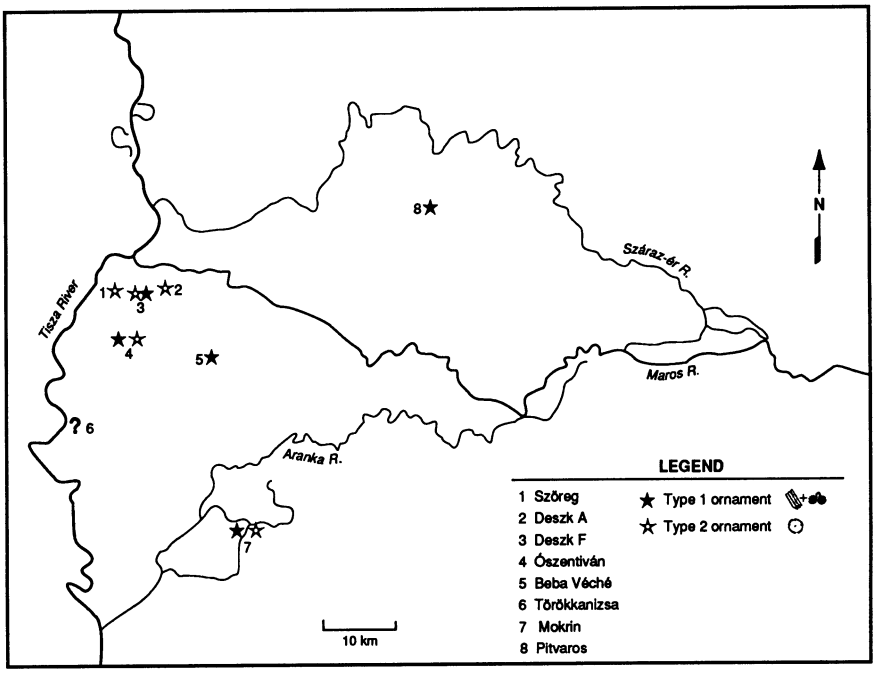

Figure 2. Distribution of type 1 (tubular copper plaques and spectacle pendants) and type 2 (flat copper "buttons") head ornaments across the Maros cemeteries. The components for both ornament types are present at Törökkanizsa, but their disturbed context precludes a conclusive determination.

varieties occur at Mokrin, Ószentiván, and Deszk F, yet in each of these sites there appears to be a degree of internal segregation in the distribution of the two types.

When male head ornaments are plotted on a plan of the Mokrin cemetery (Figure 3a), an east–west segregation of the ornament types is observed, with type 1 ornaments to the east and type 2 ornaments to the west. Yet, when the distribution of female ornaments is plotted, no spatial arrangement is evident (Figure 3b). This pattern of occurrence is significant both in its suggestion that the same material symbol, the head ornament, operated differently in the context of male and female burials, and also in that it would seem to preclude any simple chronological explanation for the distribution.

In the two other sites where both varieties of head ornament occur, Ószentiván and Deszk F, the same segregation of ornament type is observed (Figure 4a and b). Striking as the separation is at these two sites, the small sample size makes the statistical assessment of their significance difficult. Yet, when taken in light of the much larger Mokrin sample, the segregation can be seen to be part of a more general pattern in the Maros mortuary program.

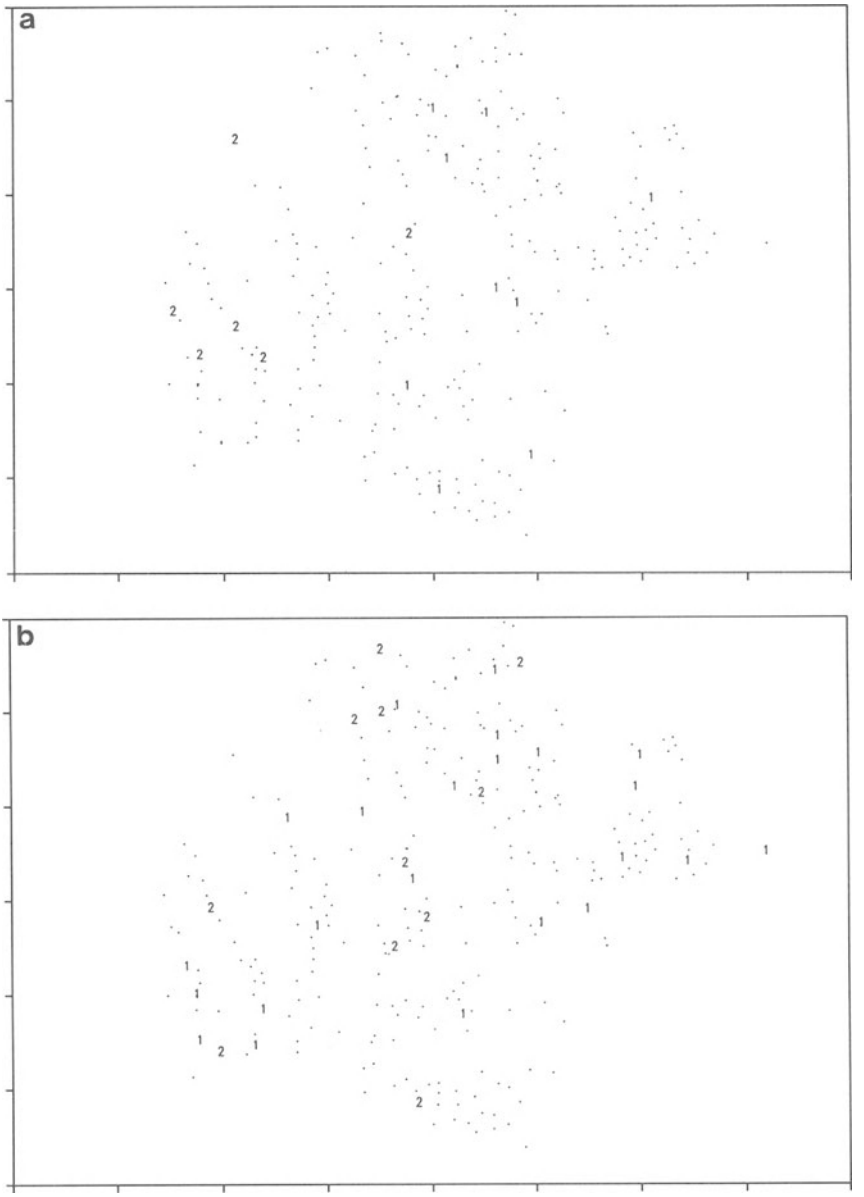

Figure 3. (a) Distribution of type 1 (tubular copper plaques and spectacle pendants) and type 2 (flat copper "buttons") head ornaments among male graves at Mokrin. (b) Distribution of type 1 (tubular copper plaques and spectacle pendants) and type 2 (flat copper "buttons") head ornaments among female graves at Mokrin.

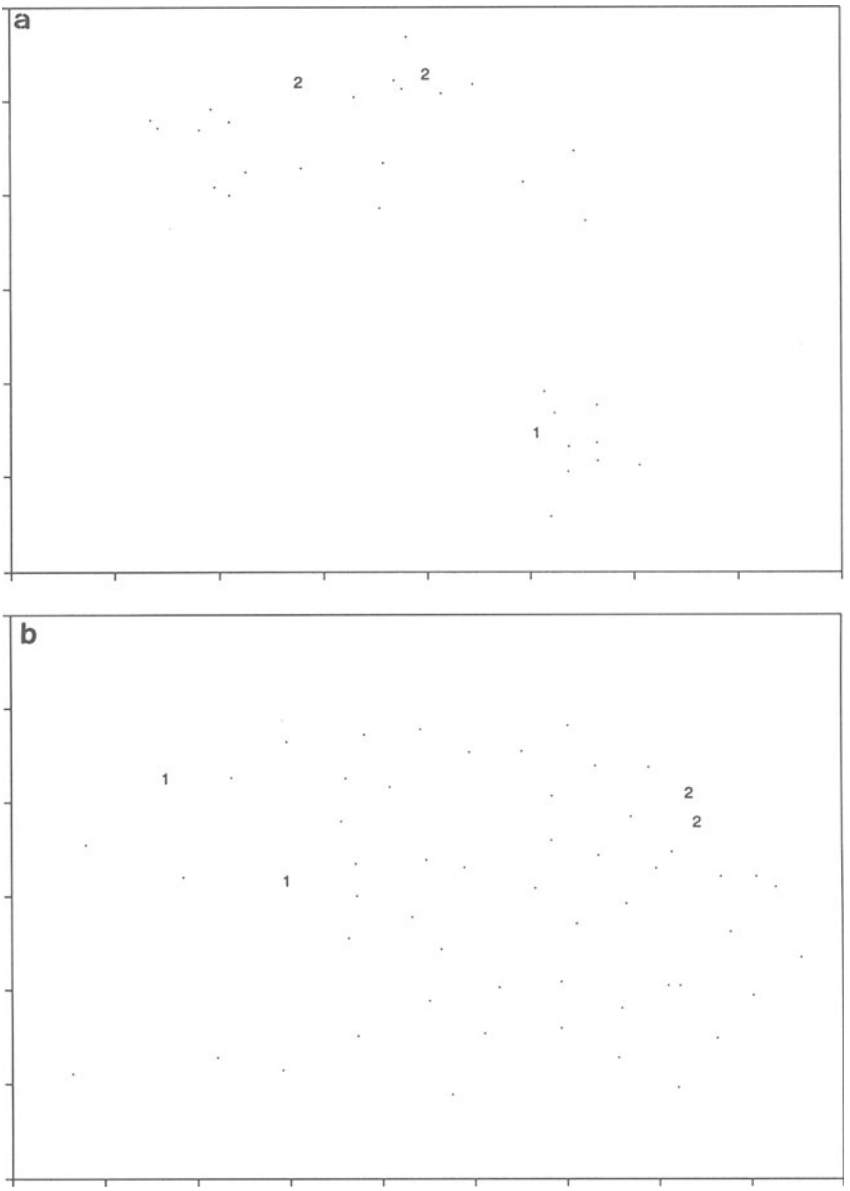

Figure 4. (a) Distribution of type 1 (tubular copper plaques and spectacle pendants) and type 2 (flat copper "buttons") head ornaments at Ószentiván. (b) Distribution of type 1 (tubular copper plaques and spectacle pendants) and type 2 (flat copper "buttons") head ornaments at Deszk F.

A second set of important mortuary distinctions is represented by the distribution of stone or copper axes and copper daggers among males, and of sashes and bone needles among females. At Mokrin, these male markers are mutually exclusive (no individual has both an axe and a dagger) and have a distribution within the cemetery that is suggestive of spatial segregation, with axes to the north and daggers to the south (Figure 5). Bone needles and sashes are mutually exclusive among adult females and show a similar, if not quite as striking, pattern of spatial segregation, with sashes to the north and west, and bone needles to the south and east (Figure 6).

When the other Maros cemeteries are considered, each of these mortuary symbols appears to have marked a similar social category throughout the region. What is different, however, is the way in which the markers are themselves distributed and combined. Of the six other cemeteries, only two, Szöreg and Deszk A, have both axes and daggers, and in both sites these objects could be found within a single grave. Two of the sites, Ószentiván and Óbéba, have neither of these important male symbols (these are the two smallest sites and, as such, these absences might simply be the product of small sample size).

While only half of the Maros sites (apart from Mokrin) have both bone needles and sashes, all sites have at least one of the female symbols. Of the three sites with both bone needles and sashes, Ószentiván follows the Mokrin pattern

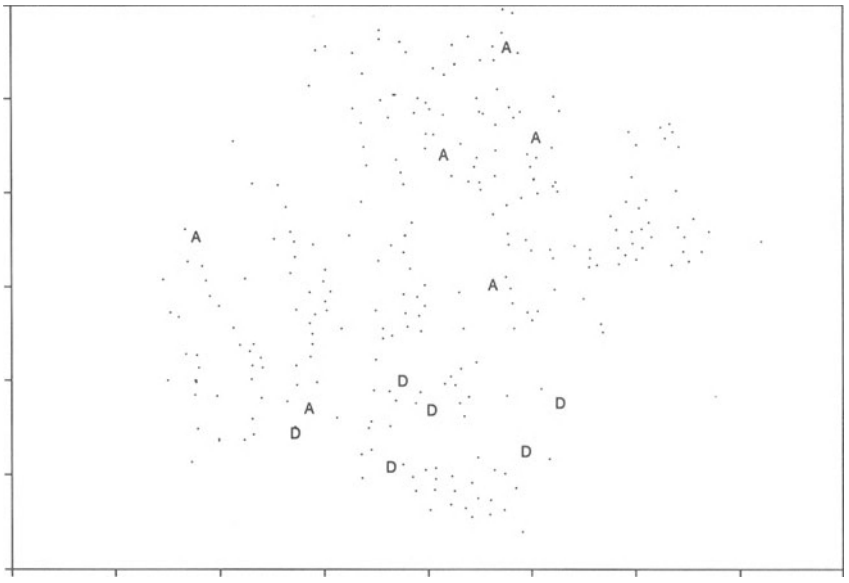

Figure 5. Distribution of stone and metal axes (A) and daggers (D) at Mokrin.

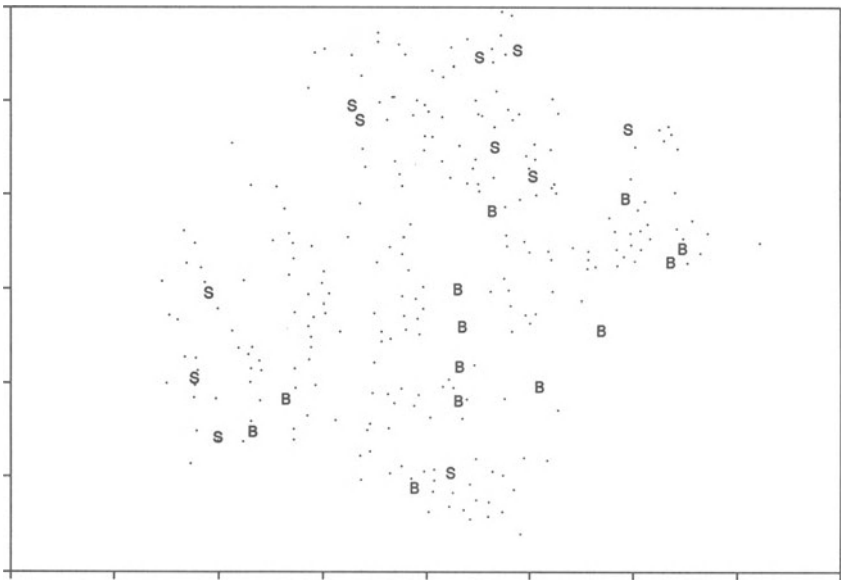

Figure 6. Distribution of bone needles (B) and sashes (S) at Mokrin.

of mutual exclusion, while the other two sites, Szöreg and Deszk F, exhibit overlap in their occurrence. Interestingly, the symbols at Ószentiván also are spatially segregated, with the sash occurring in the southern cluster and the bone needle in the northern cluster (Figure 7a). The two items have a somewhat contrastive spatial distribution at Deszk F as well (Figure 7b), although with a marked imbalance in number.

There are numerous other categories of mortuary symbolism that exhibit similar patterns of consistency or variation across the Maros cemeteries. What is of particular significance, however, is the way in which Maros mortuary symbolism exhibits both common, overarching elements along with a significant level of local variation in the precise expression and (presumably) meaning of the mortuary symbols. This pattern of "lateral" variation is in distinct contrast to the hierarchy of mortuary symbols and statuses expected in ranked social systems (cf. Peebles 1971).

If attention is shifted to the Tisza–Maros region generally, the Maros patterns can be contrasted with the practices (and material culture) of contemporary groups within the region. The social and cultural boundaries to the north and west are sharply defined. Groups of the Nagyrév tradition occupy these areas. The Nagyrév groups are distinguished by a marked contrast in normative burial custom (cremation as opposed to primary inhumation) and by distinctive ceramic

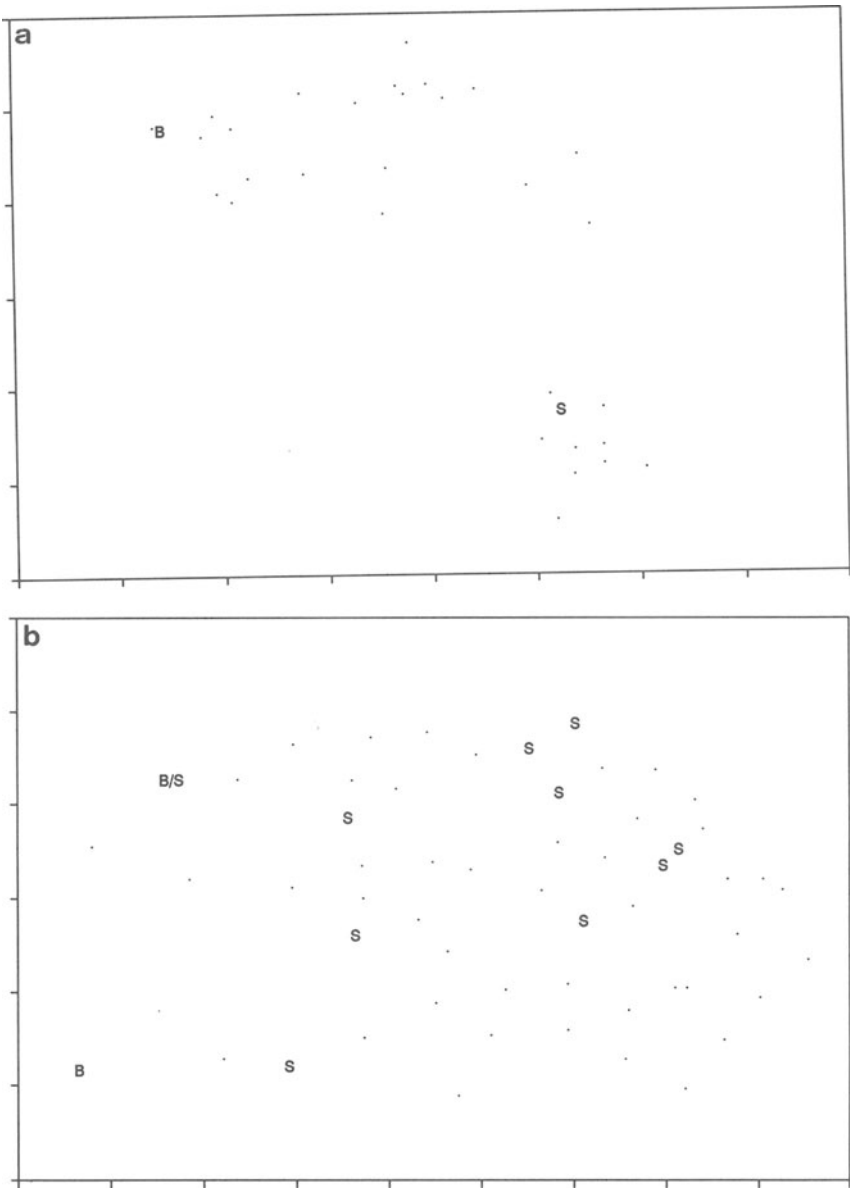

Figure 7. (a) Distribution of bone needles (B) and sashes (S) at Ószentiván. (b) Distribution of bone needles (B) and sashes (S) at Deszk F. Symbol B/S indicates that both items occurred in the grave assemblage.

forms, of which a major characteristic is the tendency for vessel handles to attach below the lip (rather than at the lip as among the Maros Group). Aside from these differences (and the contrasting environmental settings of their territories—drier, less swampy interfluve as opposed to the island and marsh settlements of the Maros), the groups have similar material culture inventories and would appear to be organized at similar levels of sociocultural complexity.

If the boundary with the Nagyrév represents a sharp break in cultural and environmental variables, the differences to the south and east represent a gradual feathering out or dissipation of the central features characteristic of the Maros sites. This is well illustrated by the pattern of burial at Battonya, in extreme southeast Hungary (Gazdapusztai 1968). The Battonya cemetery is often grouped with the Maros sites on chronological and material grounds, yet it exhibits few of the central features of the Maros mortuary program. While employing primary, single inhumation in a flexed posture as the dominant form of disposal, it lacks the distinctive constellation of Maros normative treatments, including the north–south axis of grave orientation, the eastern aspect of burial, and the reversal of grave orientation according to sex. Similarly, few of the key mortuary symbols that characterize the Maros mortuary occurrences are observed at Battonya. Central items such as head ornaments, beaded sashes, and bone needles are all absent from the Battonya inventory.

The Early Bronze Age social landscape, as seen from the Maros region, appears to be one in which social boundaries to the north and west are actively marked, through contrasting mortuary treatments and by superficial, but highly visible, differences in ceramic styles. The boundaries to the east and south are less distinct and their demarcation is passive. This pattern of contrasts has led some investigators to conclude that the Maros "people" are immigrants to the locality, having come from the south and east (see Bóna 1965). It is worth noting, however, that the directions characterized by active boundary demarcation coincide with areas of relatively marked differences in topography and economic potential, while the passive boundaries occur in areas of only gradual difference in topography and drainage. The directions of sharp contrast are also the directions from which, during the Early Bronze Age, most manufactured metal goods would have come.

THE TISZA–MAROS REGION IN DIACHRONIC PERSPECTIVE

To illustrate some of the potential of diachronic approaches to mortuary studies, two temporal scales will be briefly described: (1) the trajectory of the funerary complex within the Maros Group over its 800 years of existence, and (2) a longer-term view of the evolution of mortuary symbolism in the Tisza–Maros region, generally.

For the purpose of the present discussion, the Maros sequence can be divided into an early and a late phase (corresponding to the Early and Middle Bronze Age portions of the sequence). Aside from isolated occurrences at Ószentiván and Deszk F, major late phase mortuary occurrences are limited to Szöreg and Deszk A.

When the early and late phase sites are compared for evidence of change in funerary activities, it is apparent that variation is observed only in the use of material culture within the funerary ritual. The entire constellation of normative treatments and orientation is consistently employed throughout the sequence.

In terms of the material culture, there is a marked decrease in the use of nonceramic artifacts in the funerary treatment overall. Indeed, most of the social information encoded within the late phase burials is expressed via the ceramic assemblage, which now includes a range of elaborate "baroque" ceramic styles (see Bóna 1975). Yet, despite the marked decrease in the use of nonceramic grave offerings, nearly all of the major social markers (minus only bone needles) continue to be employed (Table 4). It appears, therefore, that the central mortuary statuses continue to be represented in the later phase, but that the expression of other categories, particularly those linked to long-distance trade and economic standing, becomes less distinct.

Evidence from recent settlement excavations can help clarify the significance of these shifts (Horváth 1982; O'Shea n.d.). Examination of early and late phase settlements suggests that the local casting and production of metal tools and ornaments only reached a significant level during the later phase. As such, the decreased occurrence of metal in graves may, in part, represent recycling of metal in the later phases, which may in turn be indicative of changes in the ability of the Maros communities to obtain copper through long-distance trade networks.

Settlement data also suggest that the elaborate new ceramics of the late phase

Table 4. Major Social Markers in Diachronic Perspective

		The Maros Group		
	Copper Age	Early Bronze Age	Middle Bronze Age	Late Bronze Age
Male status markers				
Axe	+	+	+	—
Dagger	—	+	+	+
Head ornament	—	+	+	—
Female status markers				
Sash	+[a]	+	+	+[a]
Bone needle	—	+	—	—
Head ornament	—	+	+	—

[a]Sashes or girdles are found but are dissimilar to Maros types.

are prominent in the settlements. The settlement version of these ceramics is elaborate and often highly burnished. By contrast, the majority of mortuary ceramics, while similar in form, lack this final (and effort intensive) high burnish. These features seem to indicate that the fine ceramics had assumed a significant role as social symbols within the Maros settlements, and that the mortuary vessels were somewhat more expediently produced representation of these new social markers.

Overall, the differences that are observed in the Maros mortuary program through time seem to be less a result of changes in Maros social organization and more a result of changes in technology and the organization of trade. They seem also to reflect change in the means and contexts in which wealth and social standing were displayed.

Similar themes emerge if a longer view of cultural developments in the Tisza–Maros region is taken, that is, considering mortuary symbolism in the periods preceding and following the Maros occupation.

While the Tisza–Maros region is not a major focus of occupation during the Copper Age, sites of this period are found in the area, as are small cemeteries. Indeed, interments of Copper Age date were recovered from the cemetery of Deszk A. The occurrence of large formal cemeteries, the spatial separation of cemeteries from settlements, and the tendency to locate cemeteries in the vicinity of major waterways all have their regional origins in the Copper Age (prior to this time, small numbers of burials are found in isolated clusters on, or in the vicinity of, settlements). In contrast to the relatively small and well-defined territory of the Maros Group, however, the Copper Age landscape was characterized by broad, regional groupings that covered large areas of the Hungarian Alföld and the Yugoslavian/Romanian Banat (see Bognár-Kutzián 1972; Kalicz 1968).

The large cemetery at Tiszapolgár-Basatanya (Bognár-Kutzián 1963) provides a well-documented example of these Copper Age mortuary occurrences. Several aspects of Maros funerary treatment, such as primary inhumation, a flexed burial posture, reversal of body aspect depending on sex, and the emphasis on long-distance trade items as funerary markers, are common to the funerary rites of the preceding Copper Age. The other aspects of Maros formal treatment, however, including north–south orientation and an easterly facing of the body, are not precedented in the Tisza–Maros region. Indeed, the nearest analogues to the constellation of Maros mortuary treatments are to be found several hundred kilometers to the north and west among the contemporary Bell Beaker burials of Bohemia and at the large Gemeinlebarn cemetery in Austria (see Primas 1977).

In terms of the specific Maros mortuary symbols, they too are only weakly precedented within the region. This is not to say, however, that the kinds of social positions marked in the Maros cemeteries were unknown in earlier (or later) times, nor that the use of such items as mortuary symbols was unique to the Maros cemeteries.

Since virtually all of the important Maros social symbols are derived from long-distance trade (excepting only bone needles), their absence in earlier periods is not surprising. By the same token, little of the Copper Age mortuary symbolism, particularly the prominent role played by high-quality lithics, continues into the Bronze Age. Yet, there are strong similarities in the kinds of social categories marked in the Copper Age and Maros cemeteries. The differences seem attributable to a shift in the character and focus of the long-distance exchange networks, themselves. Since Neolithic times, these networks had emphasized the movement of lithic materials along with exotic shell and pottery. These networks were in a state of transition during the Copper Age, and by the beginning of the Bronze Age the focus of long-distance trade had entirely shifted to the procurement of metal.

Nor is it surprising that items such as daggers, axes, and head ornaments should become pervasive as elements in mortuary symbolism across central and eastern Europe during the Early Bronze Age, as they seem to have been among both the Maros and Nagyrév groups. While thematically these artifacts may continue long-standing cultural associations, as between males, weaponry, and social leadership, the specific items represent exotic horizon markers, resulting from participation in the same Early Bronze Age exchange networks. Variation in the details of their use, as was observed in the distribution of Maros head ornaments, provides insight into the way these items were actually incorporated into the symbolic systems of diverse Early Bronze Age groups.

The end of the Middle Bronze Age saw the abandonment of the remaining Maros cemeteries in the confluence region and the end of the unique set of normative practices that characterized the Maros Group. The Late Bronze Age site of Tápé (Trogmayer 1975) is the only large inhumation cemetery known in the area and it occurs on the west bank of the Tisza, just outside the traditional Maros territory. Although there is the suggestion of some continuity in terms of the ceramics, there is little direct continuity in the mortuary symbols employed (Table 4). Likewise, the burials lack the constellation of grave orientation and body placement rules that characterized the Maros funerary program.

DISCUSSION

The analysis of Maros mortuary data, summarized in these examples, provides not just a static view of mortuary differentiation, but rather emphasizes the myriad social, political, and economic factors that exert an influence on funerary activities, and the complex ways in which these varying influences come to find expression in the treatment of the dead. The various lines of diachronic and synchronic evidence combine to reveal a classic tribal landscape, in which a series of autonomous communities are linked to one another through shared social symbols, political structures, and rituals of death, and by their contrast (or

opposition) to neighboring tribal groups. The central role of funerary activities in the assertion of common identity and in the demarcation of tribal boundaries is particularly striking. It equally is clear, however, that under such circumstances a meaningful understanding of past funerary practices can only be obtained when viewed in light of multiple sites and multiple archaeological contexts.

It is my hope that by broadening the scope of both the questions we ask of funerary data and the methodologies employed in such analyses (as in the use of regional and diachronic approaches), the true potential of this unique archaeological context may be tapped. I continue to believe that the thoughtful and rigorous study of funerary activities provides us with our best opportunity for realizing the goals of an anthropological archaeology.

Acknowledgements

This chapter was written during my tenure as a research fellow at the Department of Archaeology, University of Edinburgh. I am grateful to Professor D. W. Harding and the staff of the department for the kindnesses I was shown during my time in Edinburgh. The settlement excavations described here were funded in part by the National Science Foundation, award number BNS-8619512.

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Chapter 7

Kingdom and Community in Early Anglo-Saxon Eastern England

GENEVIEVE FISHER

INTRODUCTION

During the early Anglo-Saxon period (ca. A.D. 450–650), the sociopolitical landscape of England underwent a profound transformation. The state-centered political structure of Roman Britain was replaced by the end of the fifth century with "a multitude of unstable and competing polities centered on 'royal' residences and economically based on domestic modes of production, in which authority was directed through chains of personalized relations of domination and obligation" (Garwood 1990:90). Our understanding of how the early Anglo-Saxon rulers and their followers acquired and conveyed territorial control, the geographic extent of the early kingdoms and, indeed, the degree to which their inhabitants conceived a common identity remains elusive. Leeds's (1945) and Vierck's (1971, 1978a) intuitive studies of early Anglo-Saxon dress ornaments indicate that contrasts in the distribution of these artifacts parallel the pattern that would be expected if these clusterings were affected by membership in ethnic groups. More recently, Arnold (1982:125) suggests that by A.D. 600 the distribution of early Anglo-Saxon

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cemeteries reflects the population groups historically documented as kingdoms at a later date.

In this study, mortuary treatment and artifactual evidence from the area traditionally associated with one ethnic group—the Angles—is considered. Data from 10 cemeteries in two historically documented polities—Lindsey and East Anglia—are used to identify variation within and between these units, and a sociopolitical interpretation of these distinctions is tested. By contrasting the results of the mortuary analysis with results from the stylistic analysis of women's brooches, it is possible to examine how these different data sets correlate with divisions between the polities.

STYLE

Conkey (1990:6) noted that the use of stylistic analysis has been guided, often implicitly, by the desire to locate or to identify social units or particular historical entities. However, as Conkey elaborates, style is not only a "medium for description [but] also a medium of social practice." Style—defined for present purposes as patterned variation that generates and informs on social identity—communicates relationships within and between groups of people (Conkey 1978; Wiessner 1983, 1984; Wobst 1977). Style is a medium by which social relations are identified, negotiated, and maintained, thereby integrating a group's members and distinguishing between the members of different groups (Wiessner 1983, 1985).

Contextual analysis has demonstrated the role of political stress in strengthening group identity (Wiessner 1984, 1989:59–60). Personal identification or group cohesion, on the one hand, and external differentiation, on the other, may enable groups to secure control of scarce resources. Competition for political control, with its attendant privileged access to land, trading partners, prestige, labor, and so forth, may have produced considerable tension in the unstable setting of early Anglo-Saxon England (cf. Arnold 1982, 1984; Hodges 1982a:188; Hodges and Moreland 1988).

Membership in a political (or in any horizontally organized) group may be manifest through variables such as coiffure, costume, symbolically distinctive objects, and body deposition. Although these have been characterized as rarely preserved or archaeologically ambiguous (O'Shea 1981:49–50), in fact, all may leave residues, such as dress or hair ornaments and grave structures, indicative of now-perished components. A greater hindrance to the identification of political groups, as O'Shea (1984:299) acknowledges in his study of Plains Indian mortuary practices, is encountered when all groups sampled participated in common lifeways and when these groups were subject to rapid cultural change. The archaeological record of the early Anglo-Saxon period indicates that both of these conditions obtained in England between the fifth and seventh centuries.

In the present work, it is assumed that if the early Anglo-Saxon polities were recognized as distinct by their members, group affiliation should have been expressed in material culture and ritual activity. If the emergence of the Anglo-Saxon polities of East Anglia and Lindsey was marked by the emergence of unique regional styles, one would expect to encounter homogeneity among sites within each polity and heterogeneity between those from different polities.

EARLY ANGLO-SAXON EASTERN ENGLAND: THE "KINGDOMS" OF EAST ANGLIA AND LINDSEY

The common usage of the term "kingdom" to describe the eighth-century heptarchy, as well as to characterize the political units from which these polities developed, is misleading (Renfrew 1982:115). Carver (1989:41) has argued that the character of these fifth- to seventh-century polities, rather than the identification of their territories, kings, and subjects, will afford our best understanding of the cultural changes that produced the early Anglo-Saxon kingdoms. Documentary sources indicate the differing political character of the "kingdoms" of East Anglia and Lindsey. As these polities appear to have functioned at different levels of autonomy, they cannot be considered as structurally identical.

Written sources from the early Anglo-Saxon period, characterized by the historian Patrick Wormald (1986:167) as "the slender documentary thread," fail to weave a coherent cloth of sociopolitical organization. None of the documents is contemporary with the events that it describes. Beginning in the eighth century, texts such as Bede's Ecclesiastical History, the Anglo-Saxon Chronicle, various saints' lives, and early charters present a confusing picture of kings and their kingdoms.

Of the two kingdoms, East Anglia is the better known from the documentary and archaeological records. Finds of equal-arm, supporting-arm, and early cruciform brooches in early Anglo-Saxon burials led Böhme (1986) to propose that East Anglia was settled by nonmilitary free German families in the early fifth century. This restricted settlement may have enabled East Anglia to achieve a regional identity at this earlier date (Carver 1989:148). Contacts with Scandinavia in the sixth and seventh centuries continued to bring immigrants and/or trade to East Anglia (Hines 1984).

The eighth-century cleric Bede (Colgrave and Mynors 1969), by describing the polity as *provincia Orientalium Anglorum*—the province of the East Angles—chose a popular rather than a territorial definition. Among Bede's (*Historia Ecclesiastica* [H.E.] II.5) seven *bretwalden*—rulers of Britain—is the East Anglian king Raedwald. Despite his personal success, Raedwald's political legacy did not include the establishment of an autocratic kingly office. Less than 10 years after his death around the end of the first quarter of the seventh century, East Anglia was

ruled by joint kings who apparently governed separate territories (H.E. III.18). This fluidity in administrative structure and the preeminence of personal power indicates that the East Anglian kingdom was not a centrally organized autonomous polity but a divisible unit whose components occasionally achieved autonomy (Sawyer 1978:49).

The political character of Lindsey is less clear. The Anglo-Saxons may pose an archaeological presence in Lindsey by the end of the fifth century (Eagles 1979:241). Prestige goods found in graves at Castledyke South, located at the mouth of the River Humber, may have been procured through the local control of trade. The mercantile character of this community is reinforced by the discovery of a set of scales and weights in one grave (Sheppard 1940).

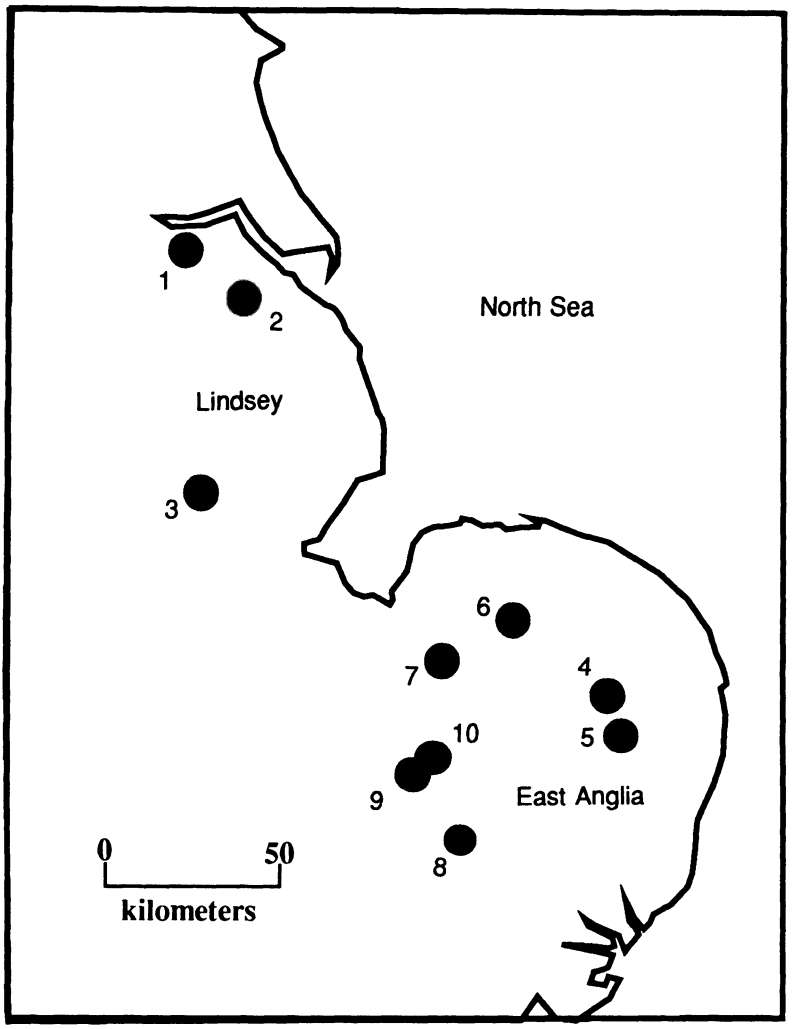
Before losing its autonomy to the expansionist kingdom of Mercia in the mid-seventh century, Lindsey had its own bishops and may have been ruled by its own kings (H.E. IV.12; Campbell 1979:4; Stenton 1927). Yet even after its submergence into the larger polity of Mercia, the province of Lindsey continued to be distinguished (H.E. III.24). Whether this province enjoyed an early independent identity or, as Davies has suggested, was a late eighth-century Mercian creation (Eagles 1979:25) remains unknown. The silence of the sources about the kingdom of Lindsey may result from the tendency of those dynasties that rose to power during the seventh century to expunge the histories of their unsuccessful rivals (Campbell 1979:6; Stafford 1985:66).

Despite the limitations of the documentary record, key to this study is that evidence from historical sources indicates that East Anglia and Lindsey were separate political units. Although our information derives from a later date, these data may be used to test if the mortuary treatment of the total population and the dress style of women each distinguish between these known polities.

DATA

Ten cemeteries from eastern England were studied (Figure 1 and Table 1). These sites were selected because of the quality and accessibility of their data. Although hundreds of burial sites are known from this area, the use of a vast majority of them was compromised by postdepositional disturbance, low standards of excavation, inadequate publication, or inaccessibility of finds for examination. Additionally, sites containing a number of inhumation burials too small to be of statistical interest were excluded.

Three sites—Welbeck Hill (Gordon Taylor, personal communication, 1983, 1991), Castledyke South (Whitwell 1990), and Ruskington sites M and N (Atkin and Healey, forthcoming)—were ascribed to Lindsey, and seven—Bergh Apton (Green and Rogerson 1978), Morning Thorpe (Green, Rogerson, and White 1987),



Key: 1—Castledyke South, 1982–1990; 2—Welbeck Hill; 3—Ruskington, Sites M and N; 4—Bergh Apton; 5—Morning Thorpe; 6—Spong Hill; 7—Swaffham; 8—Westgarth Gardens; 9—Holywell Row; 10—Little Eriswell.

Figure 1. Cemetery sites in Lindsey and East Anglia.

Table 1. Details of Archaeological Sample

Site	Total number of burials recorded[a] (inhumation/cremation)	Number of individuals in treatment sample	Number of graves in brooch sample
Lindsey			
Castledyke South 1982–1990	197/0	110	18
Welbeck Hill	62+/5	47	18
Ruskington sites M and N	37/3	26	6
East Anglia			
Bergh Apton	63/0	52	11
Morning Thorpe	ca. 315/9	194	32
Spong Hill	57/2,322	47	12
Swaffham	19/?1	10	2
Westgarth Gardens	65/4	41	9
Holywell Row	101/4	90	24
Little Eriswell	33/0	26	11

[a]Numbers of burials may be underreported because some publications have not distinguished multiple burials in a single grave.

Spong Hill (Hills, Penn, and Rickett 1984), Swaffham (Hills and Wade-Martins 1976), Westgarth Gardens (West 1988), Holywell Row (Lethbridge 1931), and Little Eriswell (Hutchinson 1966)—to East Anglia. Following Bassett's recent (1989) argument that the southern extent of Anglo-Saxon Lindsey exceeded the bounds of the later medieval and modern administrative unit, Ruskington has been grouped with its northerly neighbors. The inhumation burials in all of these cemeteries date predominantly from the sixth century with temporal outliers in the late fifth or early seventh centuries. Several of the study cemeteries include cremation as well as inhumation burials. However, because cremation vessels commonly house skeletal material from several people and because it remains unclear what proportion of an individual's dress fittings were deposited in the cremation vessel, individual dress inventories from cremation burials cannot be unquestionably determined. This limitation compromises use of the cremations and, consequently, they have been excluded from this study. This deletion should not significantly alter the results, as the symbolic systems characterizing early Anglo-Saxon cremation and inhumation burials are considered to have been similar (Hodges 1986:71).

Initially, variability between Lindsey and East Anglia was compared. For this phase of study, cemeteries within each region were combined to create a single data set for each region. Subsequently, the individual cemeteries within each region were compared with one another.

Data from the cemeteries were divided into two groups. First, details of mortuary treatment were recorded from 643 inhumations (Table 2). Of these inhumations, 183 came from Lindsey and 460 from East Anglia. The variables considered were (1) the frequency of single or multiple interments, (2) the frequency of individuals with the head oriented to the west or toward another direction, (3) the frequency of flexed or extended burials, and (4) the frequency of burials with structural features such as a coffin or chamber, stone packing, or plant

Table 2. Occurrence of Mortuary Treatments

Site	Number of individuals in burial[a]	Body position[b]	Head orientation[c]	Structural features[d]
Lindsey				
Castledyke South	93 S	32 E	45 W	2 P
1982–1990	17 M	55 F	50 O	108 A or U
		23 U	15 U	
Welbeck Hill	47 S	17 E	15 W	6 P
	0 M	15 F	27 O	41 A or U
		15U	5U	
Ruskington	24 S	8 E	22 W	1 P
sites M and N	2 M	17 F	4 U	25 A or U
		1 U		
East Anglia				
Bergh Apton	25 S	3 E	20 W	3 P
	3 M	6 F	4 O	49 A or U
	24 U	43 U	28 U	
Morning Thorpe	75 S	6 E	69 W	28 P
	8 M	7 F	2 O	166 A or U
	111 U	181 U	123 U	
Spong Hill	38 S	7 E	29 W	24 P
	0 M	5 F	2 O	23 A or U
	9 U	35 U	16 U	
Swaffham	8 S	4 E	7 W	1 P
	2 M	6 F	3 O	9 A or U
Westgarth Gardens	39 S	21 E	41 W	0 P
	2 M	15 F	0 O	41 A or U
		5 U		
Holywell Row	87 S	51 E	87 W	6 P
	2 M	32 F	1 O	84 A or U
	1 U	7 U	2 U	
Little Eriswell	26 S	16 E	25 W	0 P
	0 M	7 F	1 O	26 A or U
		3 U		

[a]S, single burial; M, multiple burial; U, unknown.
[b]E, extended; F, flexed; U, unknown.
[c]W, west; O, other; U, unknown.
[d]P, present; A, absent; U, unknown.

material. Obviously, these values are affected by the conditions of preservation. Consequently, when the position or orientation of the body could not be determined, a missing value was noted. It was assumed that, unless indicated otherwise by artifactual evidence, each grave contained a single individual. Unfurnished graves lacking skeletal material were scored a missing value. As a result, poorly preserved multiple burials incorporating individuals without grave goods will be underrepresented. In the absence of evidence to the contrary, all graves were assumed to lack structural features. It may be difficult, consequently, to identify instances in which the absence of grave structures was not a product of human inactivity.

A second well-winnowed data set of 143 undisturbed single inhumations containing brooches was drawn from the total sample (Table 3). Because the brooches found in multiple burials could not confidently be associated with particular individuals and because the grave goods furnishing disturbed or incompletely excavated burials could not be assumed to represent the entire grave inventory, burials compromised by these limitations were excluded from this smaller sample. Of these brooch burials, 42 came from Lindsey and 101 from East Anglia. Nine different types of brooches—annular, small-long, quoit, cruciform, square-headed, equal-armed, disc, applied, and penannular—were represented in the sample. In addition to these brooches, the 143 graves were generally furnished with other items of adornment not included in this study, such as beads, belts, girdle-hangers, sleeve-clasps, and knives. A minority of the burials were also fitted with small boxes, ceramic vessels, and eating and drinking equipment.

Brooches are generally thought to have been restricted to use by women during the Anglo-Saxon period. At Bergh Apton and Holywell Row, Pader (1982:101–104, 182) demonstrated a high positive correlation between the presence of brooches and individuals identified as female from artifactual and/or skeletal evidence. Because correlation was not absolute, however, the possibility that some men were buried with brooches cannot be excluded. The types of brooches and the ways in which they were worn are here assumed not to have varied regionally on the basis of their assumed wearer's gender.

Art historical, literary, and archaeological evidence indicate that during the fifth and sixth centuries Anglian women wore a Germanic-style costume (Fisher 1986:15–17; Owen-Crocker 1986:25–64; Vierck 1978b). A long-sleeved underdress was secured at the wrists with clasps. Over this garment and fastened at each shoulder by small, generally similar brooches was apparently draped a tunic (peplos) overdress. One or more strands of beads were often worn between the shoulder brooches. On or below the waist, the tunic would usually have been cinched by a belt. At the hip or thigh, a woman often carried a knife, a bag of odds and ends, and, occasionally, girdle-hangers and/or keys. The presence of a third, often larger brooch at the neck, shoulder, or chest of the woman either fastened the underdress to the tunic or closed a heavier outer cloak. Additional brooches apparently afforded greater ostentation.

Table 3. Number of Graves Containing Specific Brooch Types[a]

Site	Brooch type								
	Annular	Small-long	Quoit	Penannular	Cruciform	Disc	Equal-armed	Applied	Square-headed
Lindsey									
Castledyke South 1982–1990	15	1	2	0	5	0	0	0	0
Welbeck Hill	17	0	0	0	4	0	0	0	1
Ruskington sites M and N	6	0	0	0	1	0	0	0	2
Lindsey total	38	1	2	0	10	0	0	0	3
East Anglia									
Bergh Apton	11	0	0	0	2	0	0	0	1
Morning Thorpe	28	4	0	1	11	1	0	0	0
Spong Hill	10	3	0	0	4	0	0	0	2
Swaffham	1	1	0	0	1	0	0	0	0
Westgarth Gardens	3	4	0	0	3	0	2	0	0
Holywell Row	14	6	0	2	6	0	0	1	2
Little Eriswell	7	2	0	1	4	0	0	0	2
East Anglia total	74	20	0	4	31	1	2	1	7

[a]Graves furnished with more than one type of brooch have been scored for each brooch type. Consequently, the number of cases (n = 194) exceeds the number of graves (n = 143).

METHODOLOGY

Statistical tests were used to explore regional differences in the distribution of women's brooches and in the forms of mortuary treatment accorded the dead. Analyses of these two sets of data would not necessarily produce identical results. The brooches, found largely or entirely in female graves, may have communicated gender-specific concerns. On the other hand, because the mortuary treatment sample incorporates data from both male and female burials of all ages, wider social interests may be apparent from those results.

The null hypothesis of randomness was tested by comparing the observed frequency of a variable with its expected frequency. A correlation between women's brooches or mortuary treatment, on the one hand, and site or area, on the other, was considered to exist in cases in which the null hypothesis was rejected. Unlike the more popular chi-square test, the Fisher exact test is particularly suited to small samples with low expected cell frequencies (Siegel 1956:96–97). A two-tailed test, which examines association rather than directionality, was considered appropriate. *P* values equal to or less than .05 (i.e., if there was a .05 or less probability that the results were produced by chance) were considered significant. In these instances, the null hypothesis of randomness was rejected, and a statistically significant difference was held to exist.

The brooch type and mortuary treatment scores from Lindsey and East Anglia were compared by calculating the simple matching coefficient (Sokal and Sneath 1963:133). This statistic—a numerical value between 0 and 1—summarizes the amount of similarity between paired dichotomous samples. The utility of this approach to assessing mortuary variability between different social groups has been demonstrated (O'Shea 1984).

REGIONAL VARIABILITY: THE KINGDOM

Although the Anglian area is typified by the presence of annular, cruciform, small-long, square-headed, and equal-armed brooches, significant regional variation in the distribution of these dress fasteners was limited (Table 4). The frequency of graves containing annular and small-long brooches differed significantly between Lindsey and East Anglia. These two types were the most popular brooches in the study area, accounting for 75% of the total number of brooches. The distribution of disc, applied, and penannular brooches, forms generally associated with the Saxon and Celtic regions to the west, exhibited no significant regional variation.

Annular brooches, the sine qua non of Anglian women's dress, were not equally distributed across the study area. In Lindsey, 90% of the 41 brooch graves sampled contained these brooches. The popularity of annular brooches waned

Table 4. Comparison of Brooch Types by Early Anglo-Saxon Polity

Brooch type	Lindsey/East Anglia[a] (total n = 143)	Brooch type	Lindsey/East Anglia[a] (total n = 143)
Annular	p = .03 n = 112	Disc	p = 1.00 n = 1
Small-long	$p < .01$ n = 21	Equal-armed	p = 1.00 n = 2
Quoit	p = .08 n = 2	Applied	p = 1.00 n = 1
Penannular	p = .32 n = 4	Square-headed	p = 1.00 n = 10
Cruciform	p = .54 n = 41		

[a]Total n = number of burials containing brooches in Lindsey and East Anglia; n = number of burials containing specific brooch type.

toward the south, with 73% of the East Anglian graves sampled including them amongst their inventories.

The distribution of small-long brooches was inversely correlated with that of annular brooches. Small-long brooches appeared in 20% of the East Anglian 101 brooch graves sampled and in 2% of the burials studied in Lindsey.

At the sites studied, early Anglo-Saxon women wore their brooches singly or in dress-sets combining up to five pieces. In order to investigate variability in the structure of personal adornment, these sets were recorded in terms of the number of each type of brooch included (e.g., two annular brooches and one cruciform brooch). Twenty-seven different groupings of brooches were identified. Frequency tests revealed few statistically significant differences between the areas. Single annular brooches were encountered significantly more frequently in the Lindsey graves (22%) than in East Anglian burials (8%). Although, as has been discussed above, the frequency of small-long brooches varied significantly between polities, the ways in which these fasteners were worn did not. With the exception of the characteristically Lindsey preference for single annular brooches, the lack of significant variability between dress-sets from different polities suggests that the specific types of brooches, rather than the fashion in which they were worn, was of importance. A distinct preference for pairs of identical brooches, worn with or without additional fasteners, was observable in both areas (Lindsey 68%, East Anglia 80%).

Mortuary treatment was considerably more successful than was dress in distinguishing the two polities (Table 5). The frequency of all variables—structural features, single or multiple burials, head orientation, and body position—differed significantly between Lindsey and East Anglia. Early Anglo-Saxon burials are

characteristically oriented with the head to the west. While this arrangement obtained in East Anglia (96%), considerable variability existed among the burials sampled from Lindsey (48%). The popularity of multiple burials in Lindsey, where this practice was recorded for 10% of the dead, varied significantly with the preference for individual interments in East Anglia, where 5% of the dead were buried in multiple graves. Structural features were more common in East Anglia (13%) than they were in Lindsey (5%). The position of the dead varied significantly, with extended inhumations predominating in East Anglia (58%) and flexed burials, ranging from crouched to loosely flexed, preferred in Lindsey (60%).

In summary, the archaeological landscape of eastern Anglo-Saxon England exhibits a scaled distribution of brooch types and mortuary treatments. Annular brooches, characteristic of Lindsey, were replaced by small-long brooches in East Anglia. The frequency of single burials, extended body position, and grave structures was greatest in the East Anglian area, while multiple orientations and flexed burials were more popular in Lindsey.

REGIONAL VARIABILITY: THE COMMUNITY

In an attempt to understand better the sources of variability within these two polities, the frequency of different brooch types and mortuary treatments was compared between sites. Site-level variability within polities was then summarized by the simple matching coefficient (Table 6).

Davies and Vierck (1974:253) have noted that in East Anglia natural obstacles, such as wetlands and dense woodlands, channeled the early Anglo-Saxon

Table 5. Comparison of Mortuary Treatment by Early Anglo-Saxon Polity

Treatment	Lindsey/East Anglia[a] (total n = 643)
Individuals in single or multiple burials	p = .05 n = 498
Body position	p < .01 n = 330
Head orientation	p < .01 n = 450
Structural features	p < .01 n = 643

[a]Total n = number of burials in mortuary treatment sample; n = number of burials exhibiting specific elements of mortuary treatment.

Table 6. Comparison of Brooch Types and Mortuary Treatments within Early Anglo-Saxon Polities[a]

Polity	Brooch types	Mortuary treatments
Lindsey	.93	.65
	n = 42	n = 185
East Anglia	.94	.81
	n = 101	n = 460

[a]1.0 = high similarity; 0.0 = low similarity.

settlement into discrete areas. It is against this background of population clusters that the variability between the East Anglian sites studied should be viewed.

Within the East Anglian polity, the three sites of Little Eriswell, Holywell Row, and Westgarth Gardens, located along the Lark River system in the Suffolk Breckland, suggest such a settlement area. These Lark River sites differed significantly from the other East Anglian sites in the frequency of annular brooches and, more importantly, in almost all aspects of mortuary treatment (Tables 7, 8). In contrast to the mortuary treatment exhibited by their East Anglian neighbors, the inhabitants of the Lark River area significantly more often interred their dead with the head to the west in an individual grave lacking structural features. Although not statistically significant, an extended position was clearly preferred for the Lark River burials.

The local concentration of Illington/Lackford pottery (Green, Milligan, and West 1981; Lethbridge 1951) indicates that the Lark River region enjoyed "a certain measure of internal economic intercourse within natural confines" (Davies and Vierck 1974:274). No evidence exists, however, that this community conceived a common political identity.

By reference to sites not included in this study, other local communities may be identified within the East Anglian polity. The elite cemetery at Sutton Hoo, near the Suffolk coast, incorporated human sacrifice, idiosyncratic regalia, and ship burial within a prehistoric earthwork, "indicating a major exercise in legitimation directed at and from a local territory" (Carver 1989:152). The extent of this territory—whether it was restricted to the local area in which Sutton Hoo is located or encompassed a wider region—is unknown.

According to Davies and Vierck (1974:272), the archaeological record suggests that the settlement pattern characteristic of East Anglia was not typical of Lindsey. In the early Anglo-Saxon period, the uplands of Lindsey, bounded on all sides by river, marsh, or ocean, presented an area encompassed rather than partitioned by natural factors. This environmental delimitation may account for the high degree of similarity of brooch types worn in Lindsey. However, the

Table 7. Comparison of Brooch Types within East Anglia

Brooch type	Lark River area/ rest of East Anglia[a] (total n = 101)
Annular	$p < .01$ $n = 74$
Small-long	$p = .13$ $n = 20$
Penannular	$p = .32$ $n = 4$
Cruciform	$p = 1.00$ $n = 31$
Disc	$p = 1.00$ $n = 1$
Equal-armed	$p = .19$ $n = 2$
Applied	$p = .44$ $n = 1$
Square-headed	$p = .70$ $n = 7$

[a]Total n = number of burials containing brooches in East Anglia; n = number of burials containing specific brooch type.

Table 8. Comparison of Mortuary Treatment within East Anglia

Treatment	Lark River area/ rest of East Anglia[a] (total n = 460)
Individuals in single or multiple burials	$p = .04$ $n = 315$
Body position	$p = .06$ $n = 186$
Head orientation	$p < .01$ $n = 291$
Structural features	$p < .01$ $n = 460$

[a]Total n = number of burials in mortuary treatment sample; n = number of burials for which specific elements of mortuary treatment were recorded.

comparatively low degree of similarity in burial rite practiced by the populations at the three Lindsey cemeteries suggests that, with the evidence of additional sites, yet unrecognized settlement areas comparable to the Lark River area could be identified.

DISCUSSION

Recently, archaeologists (Härke 1989, 1990; Hinton 1990:14, 23; Pader 1980, 1982; Richards 1984, 1987, 1988) have acknowledged the symbolic role of the personal fittings with which the Anglo-Saxon dead were furnished. The results of the present analysis suggest that in early Anglo-Saxon eastern England, two aspects of mortuary ritual—the selection of women's brooches and the mode of the disposal of the dead—expressed different referents. Anthropologists (Hodder 1982, 1985; Wiessner 1983, 1984:210) have documented among living peoples the use of different objects to project different messages to different audiences.

While brooch types varied between the two polities, with the exception of the Lark River area of East Anglia, little patterned variability was apparent within these polities. The numerous combinations of brooches worn by early Anglo-Saxon women indicate considerable freedom in the expression of individual identity. Lack of constraint in adornment facilitates the use of ambiguity about the wearer's identity, thereby providing opportunity for the establishment of a range of relationships (Wiessner 1990:111). The ambiguous images found on certain pieces of early Anglo-Saxon Kentish jewelry (Avent 1984) could have similarly conveyed multiple meanings about the wearer's individual or group identity.

The types of dress fasteners that differed significantly between areas—annular and small-long brooches—are relatively simple in stylistic and technological terms and, presumably, were locally manufactured and distributed. These were often found in burials with the more elaborate brooches, such as the square-headed, applied, equal-armed, and cruciform types, which may have carried stylistic messages relating to larger regional concerns and may have been transported in regional exchange networks. In early medieval Europe, gift-giving played an important role in the acquisition and maintenance of political control (Geary 1988:112; Hodges 1982b:122; Hodges and Moreland 1988:93; Huggett 1988:94), and it is within this context that the distribution of these elaborate brooches may best be considered. Regional connections established and strengthened by the transfer of precious goods may have become wartime alliances exploited by expansionist leaders.

Härke (1990) has attributed regional variability in the frequency of the Anglo-Saxon weapon burial rite to differences in social structure and wealth. However, the distaff side of grave furnishings indicates that wealth, as measured by the number of grave good types and the presence of precious materials, was not an

obvious factor in regional variability. The mean number of grave goods furnishing brooch burials in both polities was approximately equal (Lindsey 5.51, East Anglia 5.61), and 37% of the grave inventories in both Lindsey and East Anglia included precious materials such as crystal, jet, ivory, silver, or silvered or gilt metal.

While the limited patterning in the distribution of brooches appears to have addressed regional concerns, this study suggests that mortuary treatment was affected by local considerations. Disposal of the dead varied markedly from site to site within as well as between polities. Burial was a symbolic activity that spoke to the community. Cemeteries record a symbolic ritual activity that integrates religious, social, and political systems. At burial, the deceased's and the survivors' identities are publicly validated. Other studies (DeCorse 1989; Larsson 1989) have demonstrated that the material correlates of ritual activity can identify sociopolitical group membership. Ritual, unlike material culture, cannot be easily transported in time or space without a modification of its symbolic referents (Beck 1990:81).

Wiessner's (1983) distinction between emblematic and assertive style provides a useful framework for understanding the nuanced variability manifest by the distribution of women's brooches and mortuary treatment. Assertive style, characterized as personally based, "carries information supporting individual identity, by separating persons from similar others as well as by giving personal translations of memberships in various groups" (Wiessner 1983:258). The multitudinous modes in which Anglo-Saxon women combined their brooches—though not the selection of specific brooch types—may be best explained by such expressions of individual identity. In contrast, emblematic style expresses "objective social attributes of identity . . . [and] carries information about the existence of groups and boundaries" (Wiessner 1983:257). Mortuary treatment, varying between and within polities, may have served to indicate social boundaries.

It has been stated that the lack of regional variability amongst Anglo-Saxon women's brooches prior to the sixth century (Hills 1979:316) suggests that among these people group identity was derived not from ethnicity but from membership within the newly forming polities (Carver 1989:note 56). This study indicates that archaeological evidence may facilitate our understanding of kingdoms and communities obscured by the vagaries of the historical record.

Acknowledgments

Funds for travel to the collections studied were generously provided by the Department of Anthropology, University of Pennsylvania, and the Wenner-Gren Foundation for Anthropological Research (Grant-in-Aid no. 4428). I am grateful to Hilary Healey (South Lincolnshire Archaeological Unit, Sleaford), Barbara Green (Castle Museum, Norwich), Elizabeth Owles (Moyses Hall Museum, Bury St. Edmunds), Peter Wade-Martins (Norfolk Archaeological Unit, East Dereham), Andrew White (City and County Museum, Lincolnshire), and D. J. Williams

(Baysgarth Museum, Barton-on-Humber) for providing access to collections. In addition, Gordon Taylor graciously permitted examination of the finds and records from his excavation at Welbeck Hill. Malcolm Atkin, Stanley West, and Ben Whitwell kindly shared information about their excavations at Ruskington, Westgarth Gardens, and Castledyke South, respectively, in advance of publication. I am indebted to Lane Beck, Susan Johnston, and Bernard Wailes for their comments on an earlier draft of this chapter. Kathy Jones-Garmil kindly assisted in the production of the computer-generated maps.

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Chapter 8

Regional Cults and Ethnic Boundaries in "Southern Hopewell"

LANE ANDERSON BECK

Mortuary analysis is a tool for examination of the patterns of differentiation within a community. However, a community does not exist in isolation. "The study of social structure and genetic affinities must build upon an understanding of certain population characteristics, such as the size of the prehistoric community, its age–sex profile, and the number of population aggregates within a given region," (Buikstra 1976:14). Thus, a more complete reconstruction of the social organization of a past society is possible when the sample breadth is increased to include the broader region in which social interactions occur. The study of social organization for an archaeological complex, therefore, can best be addressed through regional analysis.

Copena burials examined on a regional level show complex combinations of traits that form a boundary dividing the sites into two groups. This boundary has all the features characteristic of ethnic boundaries. The similarities of the two divisions in terms of material culture and site structure suggest that both groups of communities, although differing in some aspects of social organization, participated in a broader regional mortuary cult.

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ETHNIC IDENTITY

Sociocultural entities exist on many levels ranging from the individual to the total species. In eliciting information from a living informant, answers to the question of "What is your sociocultural affiliation?" will reflect these different levels through responses as varied as household, kin group, village, religion, political division, and nation. Because of these multiple levels the definition of cultural group membership remains problematic. The designation of bands, tribes, and so forth as ethnic or sociopolitical units often cannot be applied cleanly to living populations. Whether the problem lies in the definition of these terms, their translation into questions posed to native informants, or the concept itself being invalid has long been debated (Friedman and Rowlands 1977; Helm 1968; Hicks 1977; Oveson 1985; Plog and Braun 1984). Furthermore, these terms have meanings relating to societal complexity. To avoid the implications of level of complexity implicit to these terms I have chosen to use the term *ethnic group* to refer to the socioideological network among affiliated villages in terms of the local group and in terms of regional systems.

Ethnic group membership is an identity and as such is a component of the individual *social persona* (Goodenough 1965, 1981; Turner 1978). Furthermore, it is a *categorical identity* that is shared by all members of an ethnic group. Barth (1969) established four concepts of use in distinguishing ethnic boundaries in living societies.

> The term ethnic group is generally understood . . . to designate a population which:
>
> 1. is largely biological self-perpetuating
> 2. shares fundamental cultural values, realized in overt unity in cultural forms,
> 3. makes up a field of communication and interaction
> 4. has a membership which identifies itself, and is identified by others, as constituting a category distinguishable from other categories of the same order. (Barth 1969:10–11)

The majority of the studies of ethnicity have focused on the nature of boundaries in polyethnic systems. Such studies are primarily concerned with the maintenance of ethnic boundaries under situations involving colonial governments, among immigrant groups in modern western societies, or other circumstances of acculturation via culture contact (e.g., Alekshin 1983; Glazer and Moynihan 1975; Hicks and Leis 1977; Reminick 1983; Willey et al. 1956). These studies are of limited applicability to the indigenous, small, prehistoric populations of the New World because these small societies presumably included only a single ethnic population.

Among small independent societies, ethnic boundaries tend not to be totally restrictive but to permit interaction of people and of materials (Barth 1969;

Conkey 1982; David, Sterner, and Gavua 1988; Fox 1976; Grinker 1989; Hodder 1982; M. C. Webb 1974).

> First, it is clear that boundaries persist despite a flow of personnel across them. In other words, categorical ethnic distinctions do not depend on an absence of mobility, contact and information, but do entail social processes of exclusion and incorporation whereby discrete categories are maintained *despite* changing participation and membership in the course of individual life histories. Secondly, one finds that stable, persisting, and often vitally important social relations are maintained across such boundaries, and are frequently based precisely on the dichotomized ethnic statuses. (Barth 1969:9–10)

Central to Barth's definition of ethnicity is the perceived distance between "us" and "them." This concept repeatedly emerges in studies of ethnic boundaries (Adams 1975; Chagnon 1974, 1983; Hodder 1979; Johnson 1981; O'Shea 1981, 1984; Smith 1973; Yesner 1985). Ethnicity, however, has a dual aspect (Epstein 1978). Not only does it differentiate between "we" and "they," it also promotes unity by defining "me" as a member of "us" (David et al. 1988; Epstein 1978).

There is a diversity of causal factors involved in the creation and maintenance of social boundaries. Hodder defines ethnicity as "the *mechanism* by which interest groups use culture to symbolize their within-group organization in opposition to and in competition with other interest groups" (Hodder 1979:452).

We know that simple geographic distance is not equivalent to sociocultural continuity (Green and Perlman 1985; Hodder 1979; Hodder and Orton 1976). Environmental zones or features of the natural environment may, at times, mark boundaries (Green and Perlman 1985; Heesterman 1985; Jackson 1976) or the boundaries may be marked solely by culture. Many studies have focused on material culture and its transmission across time and space as a method of locating boundaries. Hodder (1978, 1982, 1985) reported differences in material culture between tribes in the Baringo district both in items of personal adornment and in daily tool use. He argued that the integrity of specific forms was most strongly maintained in areas where competition between groups fostered strong recognition of ethnic identity. Economic stress was also seen to intensify boundaries during the Iron Age in Dorset (Blackmore, Braithwaite, Hodder 1979). Such stress increases the perceived distance between groups and thus may impact visibility in the use of material culture to symbolize the distinctions. Perceived distance is the deciding factor. It is this perceived distance that is incorporated into symbolism.

RITUAL AND MATERIAL CULTURE

The use of material culture alone to identify boundaries may be inadequate. For example, "the material culture of the Tlingit and Haida tribes appears to be identical. . . . At the same time, the Tlingit and Haida cultural configurations are

markedly different in a number of respects," (Linton 1936:365–366). Material culture includes a broad distribution of items ranging from those with a primarily utilitarian function (e.g., a can opener) to those with a primarily symbolic function (a cross or a flag). Technology is far more likely to cross ethnic borders than is symbolism (Daniel 1975; Godelier 1986; Neal 1980). For example, you might buy a German car but would you display a Nazi flag? The former is expedient, the latter implies a belief system. The use of material culture in ritual is particularly significant because symbolism is the language of ritual. In the ritual context symbols comply with a rigid and culturally specific grammar.

There are differences in the manner in which material culture and ritual are distributed through diffusion, migration, and other mechanisms of cultural change or exchange. The movement of the material item and its meaning or ideal is not a single event (Bloch 1987; D'Alviella 1894; Daniel 1975; Foster 1973; Godelier 1986; Hagerstrand 1988; Hugill and Dickson 1988; Kristiansen 1984; Kus 1981, 1982; Lechtman and Merrill 1977; Wagner 1988). In eastern North America extensive trade networks existed for thousands of years (Brose 1979; Brown 1979; Brown, 1977; Caldwell 1964; Griffin 1952). These testify to the ease with which material culture is transported.

> A society can apprehend only those parts of a total complex which can be communicated to it plainly and directly. Thus a woman from one tribe who copies the design which she has seen on a basket made by some other tribe does so simply because its esthetic qualities appeal to her. She knows nothing of the symbolism which may surround this design or of what the original makers consider appropriate or inappropriate uses for it. (Linton 1936: 340–341)

While elements of material culture may be fluid across ethnic boundaries, ritual is not so easily transported (Bloch 1987; Huber 1980; Linton 1936).

A ritual is a communal celebration to acknowledge a specific event of significance to the community. Beyond the celebration of the specific event, ritual serves to reconfirm the ties of the participants to one another and to their communal traditions (Bloch 1987; Fenn 1974; Kertzer 1988; LaFontaine 1986; Metcalf 1982; Pearson 1984a,b; Shanks and Tilley 1982). "Ritual is one form, albeit a particularly powerful form, of legitimising social hierarchies," (Shanks and Tilley 1982:133). Kerber (1986) has argued that if the authority of the living increases relative to the strength of tradition, heterogeneity will develop between communities. One may conversely argue that increased authority among the living will be utilized to maintain tradition since that tradition is what allowed them to gain the increased authority. Ritual serves to unite the past, present, and future and thus provides a reaffirmation of tradition (Bloch 1987; Earle and Preucel 1987; Fenn 1974; LaFontaine 1986; Miller and Tilley 1984; Pearson 1984a,b; Richards 1978; Tilley 1982, 1984; Turner 1986).

One may view the performance of a ritual as resembling the performance of a

play, yet there are marked differences between the two (Turner 1986). Both involve a repeated set of actions, and both may involve the same set of performers. But at that point the similarities of the two performances diverge. A ritual, particularly of death, is different in each performance because the central character, the deceased, changes with each repetition. The ritual must be adjusted to reflect the specific individual involved. At the same time the ritual connects the specific event to all such occurrences (Kertzer 1988; Mead 1973; Moore and Myerhoff 1977). While the outward form of a ritual might be adopted, or shared, by different peoples participating in a regional cult, the adjustments specific to each performance are drawn from the underlying social order and specific symbol-set of the given society (Bloch 1987; Turner 1986).

Mortuary ritual is perhaps the fullest integration of religion, social organization, economics, ideology, material culture, symbolism, and other components of belief and proscribed action that combine to form an ethnic identity (Bloch 1987; Metcalf 1982; Turner 1978). This substrata will not be precisely identical for peoples who do not participate in the same specific socioideological system:

> . . . it is also the case that the death rites are the most ritually complex and symbolically dense of all communal celebrations. Their significance reaches into every domain of Berawan life, so that they comprise an example of what Mauss (1925) described as a "total social phenomenon." (Metcalf 1982:21)

While the general form of the ritual used in a regional cult may be the same across ethnic boundaries, the culturally proper application to each individual and the cumulative pattern incorporated into a cemetery will necessarily differ across the same boundary (Werbner 1977). Adoption of a ritual without modification of its symbolic referents cannot occur across ethnic boundaries. Even if the same symbols are used, the total context of their expression/association will differ unless the underlying system of rules for their use in the total socioideological system are consistent. Ethnic identity is generally a horizontal differentiation among groups. It may not be directly symbolized beyond the most blatant level of inclusion in a given cemetery, but is potentially observable via the constraints it imposes on all symbols and their unique range of appropriate application. "In other words, regarded as a status, ethnic identity is superordinate to most other statuses, and defines the permissible constellations of statuses, or social personalities, which an individual with that identity may assume" (Barth 1969:17).

Ethnicity is a continuum that reflects the degree of adherence to the multiplicity of systems embodying socioideological concepts. Local differences or temporal changes in material culture within an ethnic group may result in substitutions of items endowed with symbolic value (O'Shea 1984; Pearson 1984b; Shennan 1982), but the use of the symbols and their application to the specific situation involved will be consistent within but not across an ethnic boundary.

The aspects of social order symbolized in mortuary rituals will be those aspects considered significant to a society, first, in distinguishing itself from others

(ethnic identity) and, second, in recognizing differentiation within itself (other categorical and personal identities). The unique blending and constraints of ethnic identity in ritual symbols allow mortuary patterns to be used as a measure of socioideological divisions that should approximate the original ethnic boundaries between "us" and "them." The sharper the perceived distance the greater the possibility of its symbolism incorporating durable remains and thus entering the archaeological record.

Adding to the concepts developed on ritual, symbolism, and their union with socioideological meaning in mortuary practices, the following concepts apply when the scope is broadened beyond a single cemetery.

1. Ethnic identity is a component of the social persona. As such it is subject to symbolism in ritual.
2. Ethnic identity and its symbolism are shared by all members of an ethnic group.
3. Ethnic identity is a supraordinate identity that determines the range of identities, symbols, and their ritual expression appropriate to members of an ethnic group.
4. Performance of the funeral ritual requires integration of multiple socio-ideological systems within the constraints established by ethnic group membership.
5. The appropriate selection of symbols to be used in a funeral and the manner of their application to the individual burial will not be consistently replicated outside of the membership of the ethnic group.

Based on these concepts it is logical that the analysis of regional mortuary patterns offers the potential for identification of prehistoric ethnic boundaries. The Copena Complex of northern Alabama offers an ideal test case for such study. Copena is a Middle Woodland complex known almost exclusively from its burial mounds. The majority of Copena sites were excavated between 1934 and 1942 under a single program (Andersen n.d.; Webb 1939; Webb and DeJarnette 1942; Webb and Wilder 1951). This circumstance resulted in a highly consistent set of excavation records for these mortuary sites.

THE COPENA MORTUARY COMPLEX

General Background

The Copena mortuary complex includes 51 burial mounds that form 27 sites along the Tennessee River and its tributaries. Three sites are located in Harden County, Tennessee, one in Tishomingo County, Mississippi, and the remaining 23 sites are distributed among eight counties in northern Alabama. Fourteen sites

contain a single mound, nine contain two mounds each, two contain three mounds, one has five mounds, and one has eight mounds. All sites are found within a tract including roughly 160 river miles. The sites are found at approximately 5-mile intervals throughout the Copena area. Site location is not correlated with the number of mounds.

Variation in Copena burial form is not pronounced. Spatial variation is largely limited to the subsoil or mound fill placement of graves. Structural variation in grave form is primarily reflected by the addition of foreign clays to the area surrounding the body. Body processing does not vary. Virtually all Copena mound burials appear to have been fleshed, primary interments. Material associations are few in number and primarily limited to four raw materials—copper, galena, greenstone, and shell. Furthermore, each material is represented by only a few artifact forms. For example, galena is found primarily as nodules and greenstone occurs as spades and celts. Copper and shell are present in a slightly greater variety of finished forms, but most often occur as items of personal adornment—beads, bracelets, and gorgets. In terms of quantity of associations, most graves contain no artifacts. Very few graves contain more than one item. This limited range of potential variation allows for a great simplification of the model used for analysis as it reduces the need for collapsing diverse variation into minimal categories.

Skeletal preservation in all Copena mounds is extremely poor. At all sites some burials were represented only by the decayed outline of the bones in the grave. No skeletal remains were recovered from some of the mounds. Although demography is essential to analysis, the incomplete nature of the skeletal sample makes a demographic focus impossible. Therefore, comparative analysis of these sites requires that the focus be placed on the grave and not on the individual. Limitations imposed by the inaccessibility of artifactual materials and the brief nature of field records restrict the potential analyses to the level of frequency data and descriptive statistics.

The number of graves per site is not correlated with the number of mounds at the site. The largest number of graves, 237, was reported for the eight-mound Roden site. The Ross site with its single mound yielded 118 graves, the second largest sample from any site. It is followed in size by Samuels, a two-mound site with 84 graves, and the single-mound sites of Robinson (73 graves), Fisher (67 graves), and Alexander (66 graves). On average, 45 graves were reported for each site.

It is in terms of the number of graves per site that a geographic division within Copena first becomes apparent. In general, the sites toward the western edge of Copena tend to contain a smaller number of graves than do those at the eastern extension of the Copena range. When the sites are examined in association with their east to west location, other differences are also apparent between these two geographic extremes. Graves in the west are more likely to contain artifacts than are those in the east. Additionally, the graves that are most elaborate in the west

often contain infants or young children, while the more elaborate graves in the east are more likely to be those of older adults.

The patterning of variation across space is crucial to any interpretation. If Copena incorporated a hierarchy of sites, the diversity should be apparent on the site-specific level but should be reduced or averaged out through a combination of sites based on geographic location. If access to resources contributed to the diversity among sites, this variation should be intensified through a locational analysis. If Copena incorporates a temporal shift in mortuary patterns, no differences should be apparent through a geographic analysis unless a spatial shift in the location of the population occurred over time. If Copena incorporated an ethnic boundary within it, locational analysis should intensify the apparent variation with an intermediate expression occurring if a single county incorporated the actual boundary.

Data by County

The small number of graves at each site mandates a combination of sites to obtain a sample size adequate for comparative analysis. For initial comparison the county was selected as the unit of analysis. County boundaries tend to follow natural divisions of the environment created by tributaries of the Tennessee River or stretches of rapids or shoals that disrupt the river itself. The 10 counties each contains between one and six sites. Examination of the patterns of mortuary variation by county thus allows identification of any patterned differences within Copena that are associated with the geographic location of the sites. The following pages summarize the data by county moving from west to east.

Harden County, Tennessee

Harden County, Tennessee, is located farthest to the west. It contained two single-mound sites (Boyd's Landing and Fisher) and one two-mound site (Yellow Creek). No graves are reported from Boyd's Landing and thus it is excluded from further analysis. Fisher yielded 67 graves containing at least 76 individuals. Yellow Creek mounds A and B were excavated by C. B. Moore (1915). His report lists a total of nine graves. In combination, 34% of the graves from Harden County have no structural or artifactual elaboration. Graves elaborated only by structural additions account for 29% of the graves. The addition only of artifacts is found in 12% of the graves, while both structural and artifactual additions are found in 25% of the graves.

The most common structural addition is clay, followed by bark or matting with stones used in 10 graves. The most common artifact found in graves is galena (21 graves), followed by copper, greenstone, pigments, and shell. Nineteen of the

graves include a single artifact, seven include two artifacts, one includes three, and one includes eight. The grave with eight associated items, the most found in any Copena grave, was that of an infant. It contained galena, red ocher, a lump of coal tar, a string of shell beads, mica, and three projectile points. Another child was buried with a copper bead and a conch shell. The remaining identified children were most often buried in group graves with some added structure. None of the four older adults identified by skeletal analysis was associated with any grave goods. Two, a male and a female, were buried in the same grave with clay on the base of the grave. Another older adult was in a single grave on top of a layer of clay. The fourth old adult was buried in a plain grave in the mound fill.

Tishomingo County, Mississippi

One single-mound site, Mingo, is reported for Tishomingo County, Mississippi. Unfortunately, the mound was so severely damaged by amateur collectors as to be totally unsuitable for analysis. No undisturbed grave was discovered during its formal excavation (Jolly 1971).

Franklin County, Alabama

One three-mound site, Cedar Creek, is reported for Franklin County, Alabama (Futato 1983). This site was located very close to the Mingo mound. Two of its three reported mounds were excavated. Twenty-nine graves were reported. Only one grave had neither structural nor artifactual additions. Of the graves, 46% had only structural elaboration, 8% had only artifactual additions, while 42% contained both structural and artifactual additions. Five graves were previously disturbed and could not be evaluated.

Two infants were interred in single graves, both of which had added structure. One of these infant graves contained copper beads and the other contained both copper beads and galena. No age or sex group appears more likely than another to be associated with a given burial pattern. When any structural addition was present it was in the form of stone slabs added to the grave. The large number of slabs per grave and the exclusive use of stone are unique for any Copena site. Cedar Creek is located farther from the Tennessee River than any other Copena site and exhibits a number of variations from the combined pattern of all excavated mounds. For example, 96% of the graves had some form of elaboration, and 29% of the graves contained two or more artifacts. Averaging all excavated mounds, only 32% of the Copena graves exhibit any elaboration and two artifacts are included with only 7% of the graves. Such divergences and the geographic distance place Cedar Creek outside of the pattern expected for Copena and suggest that it may represent a cemetery affiliated with but not incorporated into Copena.

Colbert County, Alabama

Two sites were excavated in Colbert County, Alabama. Riverton, a two-mound site, was explored by C. B. Moore (1915). His report on this site is brief and contains no references to any graves. Hog Island, the only other Colbert County site, was excavated by Gerald Fowke (1928). This single-mound site included 20 individuals buried in nine graves.

The remains from Fowke's excavations are currently stored in the Smithsonian Institution. Unfortunately, the precise provenience of each skeleton is not noted in the museum's records. Furthermore, the shipment from Fowke included skeletons from three different sites. Judging from photographs in the published report (Fowke 1928), some mixing between sites occurred in the process of shipping and cataloging the remains. From the photographs, Fowke's descriptions, and examination of the remains, it is apparent that all age and sex divisions are represented in the site, but it is impossible to firmly determine which individuals came from which graves.

Three of the graves were simple pits with no elaboration. The remaining six graves contained artifacts but no structural additions. Three graves held a single artifact, one held two, one held three, and one held four. Six artifacts were made of copper, four of greenstone, and two of shell. Fowke comments that a tracing of feathers was preserved by one of the copper reels. This observation, while suggesting something more about the elaboration of Copena burials, again indicates the minimal nature of mortuary data that can be recovered from the archaeological record.

Lauderdale County, Alabama

Lauderdale County, Alabama, contained three sites—Wright, with two mounds, Colbert Creek, with two mounds, and Perkins Spring, with three mounds. Only one of the mounds at Colbert Creek was excavated. The six excavated mounds yielded 94 graves, of which 22% were plain, 27% had only structural additions, 24% had only artifactual additions, and 27% had both structural and artifactual elaboration.

Bark or matting was the most common structural addition and clay the least common. Blue, red, and gray clays are reported. Thirty-four percent of the graves contained one artifact, 10% contained two, 4% contained three, 1% contained four, and 2% contained five. Thirty eight percent of the graves contained copper and 33% contained galena. Shell and greenstone were each found in 6% of the graves. The graves with more than one item most often included some combination of copper and galena. One grave contained five artifacts (three copper bracelets, a copper celt, and galena) and one grave contained six items (four

copper ear spools, a copper reel gorget, and galena). Copper is found in its greatest variety of forms in Lauderdale County. These forms include beads, ear spools, reel gorgets, bracelets, breast plates, and celts.

Skeletal preservation was exceedingly poor. Most of the infants and children identified by skeletal analysis were interred in single graves with at least one associated artifact. The single old adult identified from Lauderdale County was in a grave with some clay possibly present but no artifacts associated. No pattern of burial treatment could be discerned to be correlated with age or sex.

Lawrence County, Alabama

Lawrence County, Alabama, contained the single-mound sites of Alexander, Big Nance Creek, Tick Island, and Big Shoals Creek and the two-mound sites of Basden and Terry-Sims. One of the Basden mounds was not excavated. The seven excavated mounds yielded 154 graves. Sixty-six of these graves were at Alexander and contained 91 individuals. Skeletal preservation at the other sites was too poor to establish an accurate estimate of the number of individuals. Of the graves, 38% were unelaborated, 11% contained only structure, 38% only goods, and 11% had both structural and artifactual additions.

The most common structural addition was clay and the least common was stone. Red clay was most common but blue, gray, and yellow clays are also reported. Thirty-two percent of the graves held one artifact, 8% held two, 8% held three, and 2% held four. The most common material was greenstone, followed by galena, copper, and shell, respectively. Copper occurs most often as beads, followed in frequency by reel gorgets, ear spools, and celts. Greenstone celts are present in a greater number than are greenstone hoes. The only effigy pipe ever recovered from a Copena site was found in Lawrence County.

At the Alexander site, infants and children are most often found in unelaborated group graves. When they have associated artifacts, shell is the most common material. Where infants or children are identifiable at the other Lawrence County sites they also appear most often in group graves but are associated with greenstone, galena, and copper. Skeletal preservation is adequate to identify the presence of all age and sex groups but is inadequate to test for patterns of burial in association with demography. From the few identified remains present, no restriction of burial by age or sex is apparent.

Morgan County, Alabama

Morgan County, Alabama, contained the single-mound sites of Robinson, Turney, and Leeman, the two-mound Slaughter site, and the five-mound Penn site. Only two of the five mounds at Penn were excavated. The excavated mounds

produced evidence for 166 provenienced graves. Forty-two percent of the graves were plain, 16% had only structural additions, 25% had only artifactual additions, and 19% had both structure and artifacts.

Twenty-four percent of the graves contained clay, 8% had matting or bark, and 5% had one or two stone slabs. Thirty-two percent of the graves held one artifact, 10% held two, 1% held three, and 1% held five. Greenstone was found in 34% of the graves, copper and galena were each in 8% of the graves, and shell was found in 4% of the graves. Greenstone occurred most often as hoes, and copper was most frequently found in the form of beads.

Robinson provided analytical potential beyond that of most Copena sites. It contained one of the largest burial samples, 111 individuals from 73 graves with an additional 44 individuals recovered from disturbed portions of the mound. The skeletal preservation is exceptional for Copena and adequate for demographic classification of most individuals. Demographic analysis of all skeletal remains shows that all age groups are represented in appropriate frequencies for a normal population. When the sample is divided into five age categories—infant, child, young adult, mature adult, and older adult—elaboration of burial is seen to increase directly in association with increased age at death. Infants and young children were buried primarily in unelaborated, group graves. The oldest adults, by contrast, were most often placed in single graves with some structural additions, grave goods, or a combination of both. The continuum of burial treatment between infants and the oldest adults parallels the continuum of age. Burial treatment is seen to switch between the pattern for children and that for adults between the ages of 12 and 15 years, about the time of onset of puberty. For all aspects of analysis, Robinson appears to represent an age hierarchy with little variation aside from age affecting access to more elaborate burial treatment.

For the other sites in Morgan County, where age and sex were identifiable, the associated burial patterns appear to correlate well with those found at Robinson. The two small mounds at the Slaughter Place, which were excavated by C. B. Moore, are unusual for Morgan County both in terms of the small number of graves reported (four) and the quantity of associated grave goods. One suspects that Moore's excavation was incomplete and that he may not have recognized the more simple graves with decayed skeletal remains.

Limestone County, Alabama

Limestone County, Alabama, contained only the single-mound Limestone Creek site excavated by C. B. Moore (1915). Skeletal elements were reported but not collected for most of the graves. Of its 27 graves, 67% were plain. Three graves each had added structure, added artifacts, and a combination of structure and artifacts.

Clay was the only material used for structural additions. Four graves had one artifact, one had two, and one had three. Shell occurred three times, twice in one grave and once in another. Greenstone and galena were each found in two graves and copper was found in one. Age and sex data are virtually nonexistent.

Madison County, Alabama

Madison County, Alabama, contained the single-mound Walling site. Of its 51 graves, 41% were plain, 18% had added structure, 14% had added goods, and 27% had both structural and artifactual additions.

Forty-five percent of the graves contained foreign clays. Only yellow and white clays are reported. One grave included stone and one included matting. Thirty-one percent of the graves held one artifact, 8% held two, and one grave held three artifacts. Graves having more than one artifact always included galena. Twenty-nine percent of the graves held galena, 16% held greenstone, and 4% held copper. Greenstone hoes were more common than celts. The two occurrences of copper were a single ear spool and a slender pendant. The Copena remains were fragmentary at best. Four of the five infants or children identified were interred in plain graves. Galena was associated with one child.

Marshall County, Alabama

Marshall County, Alabama, contains the largest sample in this study because it includes the three largest sites in the Copena area. Ross contained a single mound with 118 graves. Samuels and Murphy Hill each contained two mounds with 84 and 43 graves, respectively. The eight-mound Roden site held 237 graves. Of the 482 graves from these sites, 49% were plain, 20% contained structural additions only, 18% contained artifacts only, and 12% contained both structural and artifactual additions.

Thirty-three percent of the graves contained foreign clays and 1% contained matting or stones. Red, gray, yellow, blue, and green clays are reported. At Roden, when the color of the clay is reported, it is apparent that no more than a single color is present in a given mound. The mixture of reports for Roden includes excavations by C. B. Moore in six of the mounds and two separate excavation efforts on five of these and the two other mounds in the 1930s and 1940s. This variation makes the analysis difficult since each of the three projects differed in the details reported. In general, no differences in burial elaboration are apparent between the eight Roden mounds. It is tempting to suggest that this pattern confirms the use of clay colors to signify a horizontal division such as kinship, which is further augmented in symbolism at Roden by burial in a specific mound.

Twenty-two percent of the graves held one artifact, 5% held two, and 2% held

three or more items. Galena, the most common grave good, occurred in 17% of the graves. Copper was present in 12% of the graves, shell in 7%, and greenstone is notably sparse, occurring only in 2% of the graves.

In general, skeletal preservation in Marshall County was above average for Copena. However, the absence of skeletal remains excavated by C. B. Moore inhibits any demographic study. Infants and children were primarily found in unelaborated multiple graves. When associated artifacts were included, shell was the most common material with galena occasionally present. Older adults tended to be buried in single graves with some structural and/or artifactual additions. The general pattern of burial strongly resembles that of Morgan County, with the complexity of burial seeming to increase in accordance with advancing age.

Regional Patterns

From this summary it is apparent that all aspects of the burial program exhibit some degree of variation from county to county. In terms of general abundance of materials, Lauderdale and Marshall counties contain 25% and 39%, respectively, of the copper. Lawrence and Marshall account for 28% and 49% of the shell. Lawrence and Morgan account for 35% and 40% of the greenstone, and Marshall accounts for 44% of the galena. From the perspective of abundance of raw materials alone it would appear that resource redistribution was controlled perhaps by a few key sites in these counties. However, this distribution is misleading because it does not take into account the number of graves present in each county and thus the relative abundance of raw materials.

Colbert County contains only 4% of the total copper for Copena. It also contains less than 1% of the total number of graves. On average, 13% of the Copena graves contain copper. In contrast, 67% of the graves in Colbert County contain copper. Similarly, Marshall County contains 49% of the reported shell. Given that it also contains 46% of the total number of graves, this works out to shell in association with 7% of the graves—precisely the average for Copena.

When viewed from the perspective of material frequency relative to population, a different geographic trend emerges. The western counties tend to have greater percentages of associated materials than their populations should warrant. This trend does not exhibit a gradual fall-off in frequency across space as would be predicted by a central place model. Instead, when viewing the data by county, the overabundance of materials changes to an underrepresentation of materials at the border between Lawrence and Morgan counties.

To avoid the difficulty imposed by counties containing a single site, all counties were next merged for analysis into an eastern and western division. Tishomingo County was eliminated due to the absence of data. Franklin County was also withheld from this aspect of the analysis due to a series of anomalies in the patterns exhibited and its distance from the other Copena sites. The western

division thus contains Harden, Colbert, Lauderdale, and Lawrence counties. The eastern division consists of Morgan, Limestone, Madison, and Marshall counties.

In terms of size, the western division includes twelve sites and the eastern division has eleven sites. In terms of population, the west contains 333 graves (31% of the total) and the east has 726 graves (69% of the total). The west averages 20 graves per mound and 28 graves per site. The east averages 35 graves per mound and 66 graves per site. This difference in size by itself could be accounted for by a different population density in the two areas or differing duration of site use. Other differences between the east and west, however, make such an explanation inadequate.

Occurrences of all raw materials are approximately equal in the two areas. In terms of occurrences, the west has 49% of the copper, 45% of the shell, 48% of the greenstone, and 41% of the galena when rated simply by occurrence. If these figures were adjusted to more accurately reflect the quantity of these materials it is probable that these percentages would increase for the western sites. For example, most of the copper in the eastern sites is in the form of beads. In the west, copper is more commonly found as bracelets, celts, breastplates, ear spools, and reel gorgets, all of which require a larger quantity of material. Similarly, galena in the east is generally found as small nodules. In the west, galena is reported to also occur as large lumps weighing up to 20 pounds each.

The magnitude of the differences found when the eastern and western sites were compared was repeated over each aspect of variation analyzed. Tests for goodness of fit using the chi-square distribution produced high levels of statistical significance. For example, a simple test of the number of graves in the east versus the west containing one, two, or more than two associated artifacts was significant at the .01 level. When the category of no artifacts was added to incorporate the larger difference in the number of graves in the two areas the significance level increased beyond the .001 level. The distributions of copper, shell, greenstone, and galena were also significant at either the .01 or .001 levels. In terms of structure, the use of clay versus that of stone was significant at the .001 level. The larger pattern of additional structure, additional associations, and added structure and associations in combination was also significant at the .001 level.

To summarize, the western sites are smaller in terms of the number of graves but richer in terms of both the presence of any elaboration and the addition of all raw materials. In the east the probability of elaboration in burial increases in correlation with advancing age at the time of death. In the west no such correlation with age is apparent and many of the most elaborate graves are those of infants and young children. The majority of the artifactual associations in the east are tools such as greenstone spades and celts. The majority of the artifactual associations in the west are items of personal adornment such as beads, ear spools, gorgets, and bracelets. The division between these two burial patterns is spatial.

Both Butler (1968) and Goad (1978, 1979, 1980) have argued that any differ-

ences between the eastern and western Copena sites may be explained by a temporal difference in the occupation of the two areas. Butler argues that the western sites tend to be early and the eastern sites more recent, based on the frequency of such artifacts as elbow pipes and copper gorgets. He considers the copper to represent interaction with midwestern groups and thus classifies the sites with large quantities of copper as being relatively early. Goad uses the same data to argue the reverse temporal sequence. While I do not deny that there may be a temporal component to the differences between east and west, I see no evidence to support a complete migration of the population from one half of the region to the other. The marked geographic division between the sites suggests that something other than time is necessary to explain the heterogeneity within Copena.

In general, grave goods in the east are what might be expected as activity-related materials and seem to be correlated highly with individual age. Thus they might be inferred to represent categorical identities of age or task. In the west the range of variation in grave goods and their differing abundance between graves is far greater than in the east. No correlation with age, sex, or specific activity is apparent. Here the items appear to represent a greater variety of personal identities with less restriction accorded by the categorical identities of age and sex.

Horizontal differentiation is perhaps symbolized in the eastern sites by color. The aspect of this color symbolism recovered from the archaeological record is limited to the use of different foreign clays in the grave structure. Spatial separation of such divisions is also implied at one of the multiple-mound sites. The possible existence of a moiety is suggested by spatial separation within other sites. The western site reports do not specify any clay colors and thus any horizontal division by color cannot be identified. However, the western sites in general exhibit a greater variety of structural additions to the grave. Such variation may reflect a horizontal division that parallels that symbolized by clay colors in the east.

The distribution of raw materials by number of occurrences is relatively evenly divided between the west and the east. The quantity of raw material for clearly nonlocal items (copper and galena) is far greater in the west despite the greater percentage of the population being located in the east. Samples of copper and galena from Copena mounds have been analyzed to identify the deposits they originated from (Goad 1978, 1979; Walthall 1981).

Copper comes from a diversity of sources in the Southeast, Midwest, and Great Lakes regions. The source is not correlated with the finished form of the material. This, combined with the presence of two incompletely shaped reels, provides support for the idea that copper artifacts were manufactured locally. The small total quantity of copper and the diversity of its sources suggest that copper entered Copena hands through individual exchange and not through formal trade. The same can be said for marine shell.

Galena is present in amounts totaling several hundred pounds. Larger individual pieces are reported in the west (five to twenty pounds each) while a

greater number of small nodules occurs in the east. All galena has been identified as coming from a single upper Missouri deposit (Walthall 1981). This single source, combined with the large amount of raw material, argues that galena was procured through intentional trade. Butler (1968) has suggested that galena was paid as a tribute or courtesy-of-passage fee by traders moving from the Midwest through the Tennessee River valley to trade locations in Georgia, Florida, and other areas of the Southeast. The greater quantity of galena in the west could be in part explained by the need to leave the river at Muscle Shoals and thus the desire to dispose of heavier items before beginning the overland travel.

Greenstone is somewhat intermediate in distance from source in terms of its classification as a local or nonlocal material. It is believed to originate in the Hillabee deposits in central Alabama. Most of the greenstone occurs in Lawrence and Morgan counties. These counties border on a tributary leading into central Alabama. Greenstone's distribution follows a relatively clean fall-off pattern with increased distance from this presumed source.

The population densities obtained from skeletal analysis differ for the eastern and western sites. The small number of individuals recovered from the western mounds seems insignificant for the 300-year time span proposed for Copena. In contrast, the excavated mounds in the east contain more than twice the number of graves found in the western sites. It is also clear that the eastern graves often contained more than one individual. Although the number of individuals documented in the east is somewhat low, it is much closer to the expected level in terms of the population density among hunter-gatherer populations in the New World.

CONCLUSION

It seems likely that the western mounds contain only a portion of the resident population, while the eastern mounds include a more complete collection of the population's burials. Given the greater elaboration of burials in the western mounds, it is tempting to suggest that these mounds are the burial locale for an elite portion of the community, with the larger segment of the population being interred in another, as yet unidentified, location.

The eastern Copena sites represent a relatively egalitarian system with an age hierarchy comprising the primary structural inequality in the society. The western Copena sites do not conform to demographic models for internal differentiation. Their burial patterns exhibit a system of structural inequality that incorporates a greater degree of vertical differentiation than does the age-related system of the eastern sites. The greater elaboration of the graves of infants and young children in the west beyond those of any eastern grave and beyond those of most of the western graves, and the greater wealth of the western graves in general, attests to

the ability of some adults in this population to procure durable goods for burial and to obtain assistance in the construction of these graves.

The combination of differences between the eastern and western sites in the form and quantity of materials used in burial and the association of their use with different demographic parameters suggests the presence of an ethnic boundary within Copena. The larger similarity of the two groups of sites suggests that this boundary may be limited in its expression by a broader regional mortuary cult in which both groups participated. The unique patterns exhibited by the Cedar Creek site in adjacent Franklin County may imply yet another group represented here by only a single site.

Mortuary analysis on the regional level provides a tool for examination of similarities and differences between communities in a way not possible using other methods for regional analysis. For Copena, traditional analyses of material culture and site locations reveal an affiliation among these many sites. It is only when mortuary patterns are analyzed in association with biological data that an internal division within Copena becomes evident.

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Part IV

Population Analysis

The chapters in the preceding section incorporated the individual as a component of analysis. In these cases the models for interpretation of the archaeological patterning of mortuary treatment were controlled by an axis of the demographic profile of the individuals making up the burial population.

The two chapters in this section use very different models in their demonstration of further biological contributions to regional analysis. Konigsberg and Buikstra focus on issues of presumed cooperation between communities in their examination of genetic relationships within and between sites. Milner turns his attention to issues of conflict and examines the biological evidence for violent death and warfare in the prehistoric New World.

Analysis of material culture can provide information on the diffusion of styles and the exchange of items. Functional analysis of certain aspects of material culture may provide information on conflict or warfare (after all, one does not use a broadsword to swat flies). To some degree, such analyses are inferential—they cannot provide explicit information on the interactions occurring between people. It is on this level of regional interactions that biological data can make their greatest contributions to mortuary analysis.

Chapter 9

Regional Approaches to the Investigation of Past Human Biocultural Structure

LYLE W. KONIGSBERG AND JANE E. BUIKSTRA

INTRODUCTION

The enormously influential volume by Brown (1971) arising out of the Social Dimensions of Mortuary Practices symposium clearly established that bio-anthropological data are essential in assessing and analyzing the social persona of the deceased (Binford 1971:17). For that volume, individual interments were the unit of analysis and emphasis was placed on within-site variability of both cultural and biological attributes. The role of basic paleodemographic data in mortuary archaeology was thus firmly entrenched by that volume. Human biology is even more prominent in *The Archaeology of Death* (Chapman, Randsborg, and Kinnes 1981), published a decade after Social Dimensions. Not only were the final two chapters by biological anthropologists, but Chapman and Randsborg's (1981:19) introduction emphasized that "the exciting changes in the analysis of skeletal materials by physical anthropologists" were among the developments that had "been particularly challenging and potentially most productive about the archaeol-

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ogy of death in the last decade." The composition of the present volume indicates that the boundary between biological anthropology and archaeology has become even more permeable.

Renewed archaeological interest in mortuary studies and emphasis on ecological/regional analyses have encouraged physical anthropologists to apply population biological approaches to a variety of topics, including paleodemography, paleopathology, and biological relationships. Although studies of health, diet, and demography are currently more numerous than investigations of population structure (Buikstra, Frankenberg, and Konigsberg 1990), the analysis of past biological relationships continues to figure prominently in archaeological interpretations (Birkby 1982; Buikstra 1980; Cybulski 1975; Kennedy 1981; Konigsberg 1990a; Molto 1983; Owsley, Bennett, and Jantz 1982; Rothhammer and Silva 1990; Sciulli and Schneider 1985). This chapter represents a synthesis of our investigations of biological relationships within and between skeletal samples representing west central Illinois during the period from 2000 to 550 B.P. We illustrate information uniquely available from skeletal remains in reconstructing patterns of residence, cemetery formation, and boundary development.

THE WEST CENTRAL ILLINOIS CONTEXT

The region chosen for this study is west central Illinois, focusing on mortuary sites excavated from landforms adjacent to the lower 100 km of the Illinois River and the nearby central Mississippi River valley (Figure 1). Fourteen components excavated from 10 sites have provided data for these analyses, although as indicated below not all sites figure in each aspect of our study. We include sites from the following culturally defined periods: Middle Woodland (2000–1550 B.P.), Late Woodland (1550–950 B.P.), and Mississippian (950–550 B.P.). The temporal sequence begins with Middle Woodland (Hopewell) horticultural groups whose domestication of local plant resources is well documented (Asch and Asch 1985). Corn, first noted within the archaeological record for the Mississippi Valley at approximately 1350 B.P., appears slightly later within Illinois Valley contexts (Asch and Asch 1985; Liu, Asch, Fischer, and Coleman 1992). Maize dependence increased during the terminal Late Woodland and Mississippian periods, as documented by $\partial^{13}C$ values (Buikstra 1992; Buikstra et al. 1987). Population density increases throughout the Woodland period, culminating in large (15–40 ha) Late Woodland villages (Asch, Farnsworth, and Asch 1979; Charles 1984; Farnsworth, Emerson, and Glenn 1991). Although a few large Mississippian sites are recorded, most Mississippian residences are isolated farmsteads of at most a few families (Conner 1984; Farnsworth et al. 1991). Aspects of material culture, including ceramic vessels, projectile points, and mortuary structures vary significantly across these culturally defined groupings (Asch et al. 1979; Buikstra 1984,

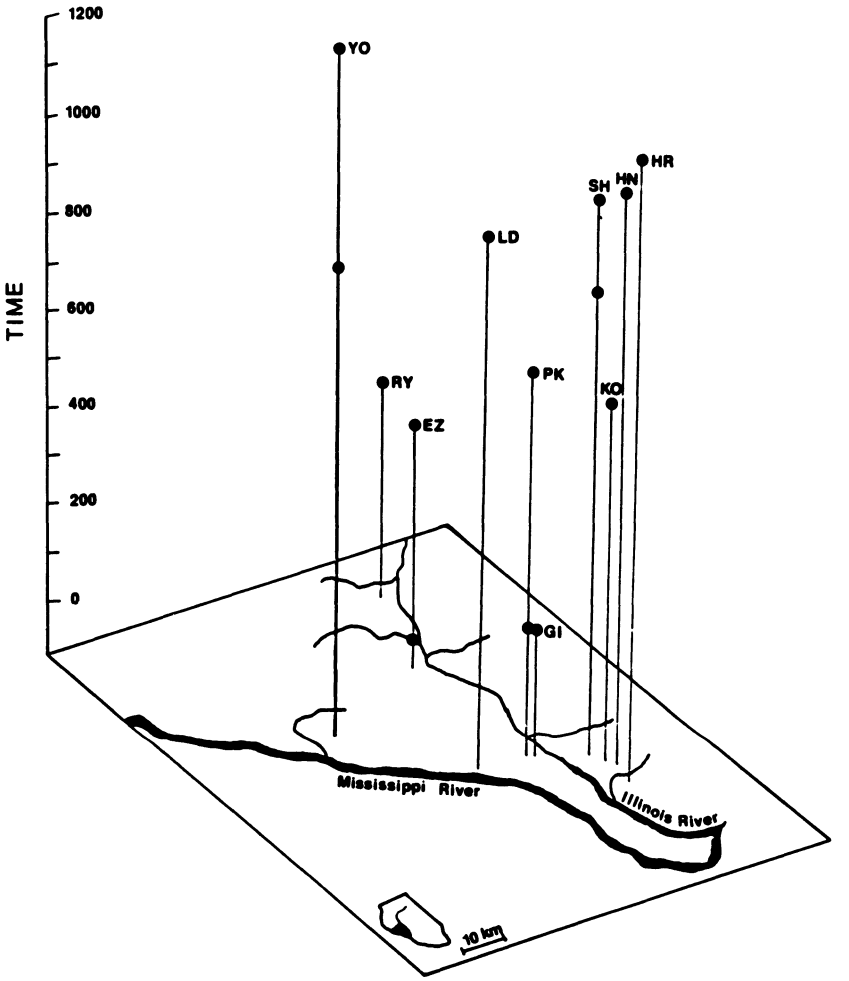


Figure 1. Map illustrating location of region and sites chosen for study. Median site dates are shown on the z-axis relative to A.D. 0. Site name abbreviations in this and subsequent figures are YO = Yokem, RY = Ray, EZ = Elizabeth, LD = Ledders, PK = Pete Klunk, GI = Gibson, SH = Schild, KO = Koster Mounds, HN = Helton, HR = Hacker So. Md. 2, (from Konigsberg 1990b, Figure 4, Copyright 1989, Wayne State University Press, Detroit, Michigan).

1988; Farnsworth et al. 1991; Struever 1968). At issue is the degree to which apparent cultural differences reflect kin relationships.

Since the majority of the genome is not directly observable in these skeletal series (though see Stone and Stoneking 1993), we have chosen to use nonmetric traits, a class of phenotypic variants that carry a genetic signal (Cheverud and Buikstra 1982; Hauser and De Stefano 1989; Saunders and Popovich 1978; Selby, Garn, and Kanareff 1955; Sjøvold 1984). Although we have also considered basing our inferences on other forms of skeletal and dental observations, it is clear that nonmetric traits provide the most extensive data sets for these west central Illinois skeletal series. Imperfect preservation, destructive mortuary customs, and an observed directional trend toward dental reduction severely limits the utility of other potential data sources (Buikstra 1976; Conner 1984; Konigsberg 1987). In selecting traits for analysis, we have deleted those demonstrated to be age and/or sex dependent, as well as those found to have low repeatability across observers (Konigsberg 1987, 1988). Since slightly different suites of traits were chosen for each of the ensuing studies, we shall further specify trait lists within each of the following sections. In all instances traits were scored as dichotomous variables, with bilateral traits treated as single features through random selection of sides (Konigsberg 1987). An assumption underlying this approach is that individuals were buried in cemeteries located near their place of residence.

RESIDENCE MODELS

Previous attempts by skeletal biologists to characterize postmarital residence have followed the models developed by "new" archaeologists such as Deetz (1965), Hill (1970), and Longacre (1970). Created for use with material culture—primarily ceramics—these models were adapted by physical anthropologists such as Lane and Sublett (1972) and Spence (1974) to studies of skeletal nonmetric traits. The logic of this approach is simple: the migrant sex will display less between-group variance and more within-group variance than its counterpart. Critical commentary on applications of this model to material culture includes the numerous cautionary tales spun by ethnoarchaeologists (Douglas and Kramer 1992; Longacre 1991; Nelson 1985) who emphasize the intricate web of relationships that influence ceramic production and distribution. And while this approach may make intuitive sense for biological features, it is not based in population genetics. Therefore, we initially derive a model from first principles of population genetics, and then turn to the west central Illinois archaeological application.

Our analysis begins with Wright's F_{st}, which is a standardized measure of between-group genetic variance (Wright 1951). In the absence of migration, F_{st} increases with time due to genetic drift within each group or "village" and leads to differentiation between villages. Unlike the ceramic example, the increase in F_{st} is a

direct function of population size. F_{st}, however, decreases with migration, which is a homogenizing force. A very important point is that because genetic variance at autosomal loci acts independently of gender, the at-birth male and female genetic variance for a given cohort (both within and between villages) should be approximately equal. Adult migration can, however, modify these variances. The relevant equations for these gender-specific variances are given in Konigsberg (1987 and 1988). In Figure 2, a deterministic simulation model of F_{st}, we assume that there are an infinite number of villages, each with an effective population size of 50. Even though effective population size is usually about ⅓ of census totals, these villages—following Wobst's (1974) arguments—are sufficiently small that mates must be sought from outside the residential unit. The villages modeled here are exchanging males at a rate of 0.1 and females at a rate of 0.4; that is, 10% of the males and 40% of the females leave their natal residences to live their adult lives in another village, which is chosen at random. For this example we assume that the additive genetic variance in the base population is equal to 1. Figure 2a demonstrates that the female between-group variance will be less than that for the males, due to the differential migration rates. Similarly, if we look at within-group variance for adults (Figure 2b), females have a greater variance than males. Thus, a greater migration rate for one sex leads to that sex having greater variance within groups and less variance between groups. However, because of the "reassortment" of variation into the sexes at birth, only one generation of a reversed male–female migration pattern is required to reverse the results.

In Figure 3 we consider a somewhat more realistic example where a small mating network is represented, rather than an infinite number of villages. The diagrams on the right present a situation in which the males do not migrate at all, and half the females migrate unidirectionally to an adjacent village. The migration matrices associated with this model are presented on the left. Similar unidirectional circular migration patterns have been described for some extant human groups, notably the Purum, though the extent to which the proscribed and actual patterns coincide remains a point of debate (see, e.g., Wilder 1971). We use the example of a unidirectional circular migration pattern because it is a simple way to represent a finite population, include some effect of geographic distance on migration, and still avoid "edge effects" (see Wobst 1974 for a discussion of such effects).

Using population sizes of 50, evenly divided between males and females, and applying the migration matrices from Figure 3 to find the equilibrium dispersion of the villages, we achieve the pattern presented in Figure 4a (see Konigsberg 1988 for the migration matrix method used to generate these plots). This is a plot of the three principal coordinates of the estimated distance matrix between villages. Because there are only four villages, it is a complete map that accounts for 100% of the distance information. The mobile females show decreased between-group variance. A pattern similar to that of Figure 4a emerges if half the females migrate

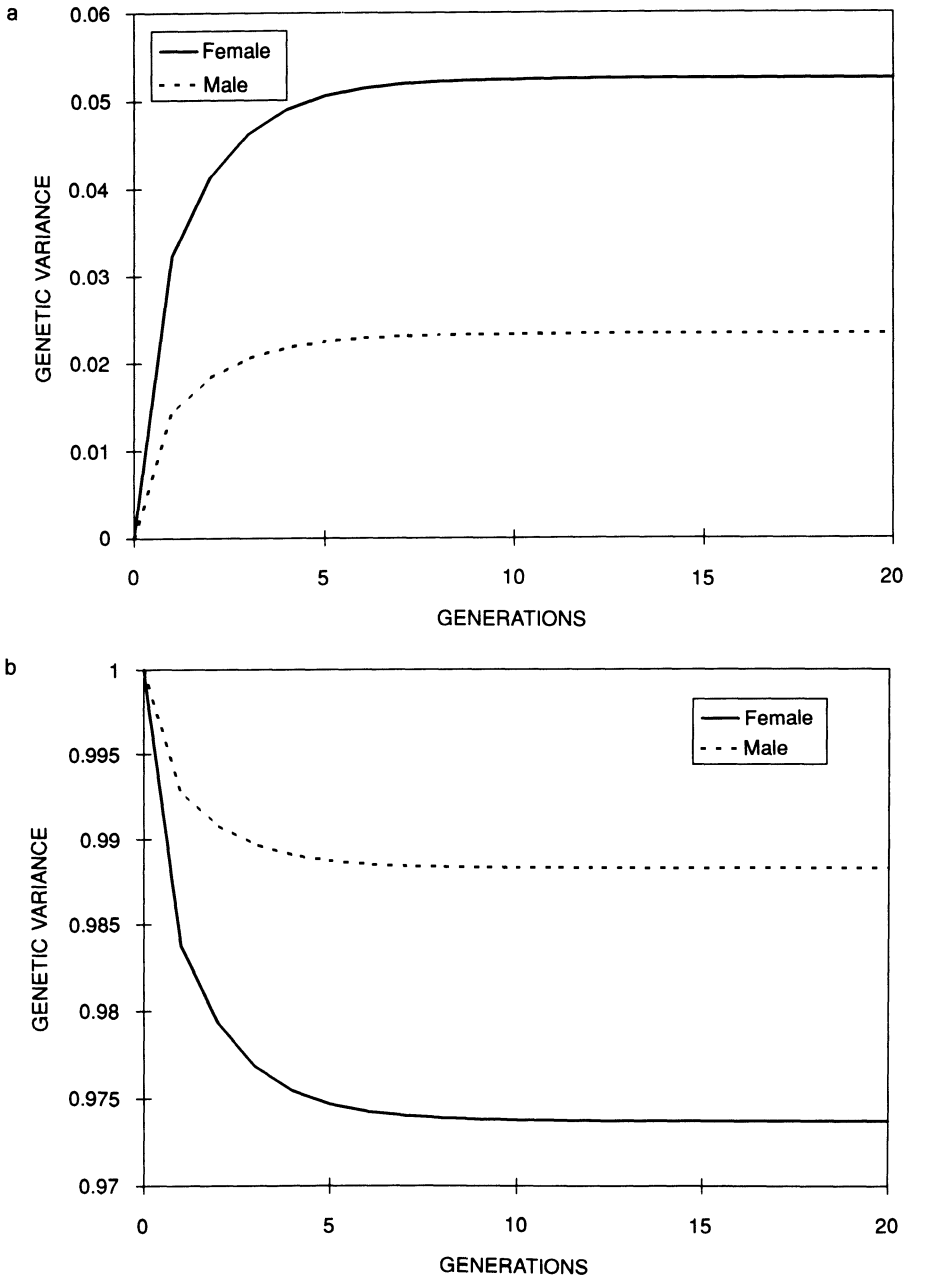
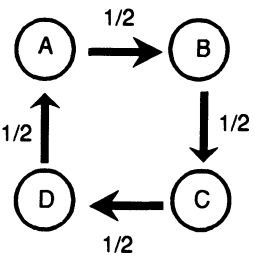


Figure 2. Model of Wright's F_{st}, sexes considered separately. Parameters are specified in text (after Konigsberg 1988, Figure 1). (a) Between-group variance; (b) within-group variance.

Female migration

	A	B	C	D
A	0.50	0.50	0.00	0.00
B	0.00	0.50	0.50	0.00
C	0.00	0.00	0.50	0.50
D	0.50	0.00	0.00	0.50



Male migration

	A	B	C	D
A	1.00	0.00	0.00	0.00
B	0.00	1.00	0.00	0.00
C	0.00	0.00	1.00	0.00
D	0.00	0.00	0.00	1.00

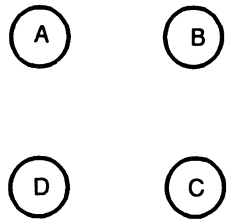


Figure 3. Migration matrix method illustrated by diagrams (right) and matrices (left). Half the females migrate unidirectionally to an adjacent village. Males are not mobile.

randomly to one of the other three subpopulations. As indicated in Figure 4b, the more mobile sex again shows decreased between-group variance.

A note of caution emerges, however, when the results of a further case are considered. The example presented in Figure 4c specifies that half the females migrate unidirectionally, as in Figures 3 and 4a. In this case, however, 35% of the males migrate randomly to one of the other populations, while 65% mate endogamously. Since the males have higher within-village endogamy than the females—that is 65% as opposed to 50%—it might be expected that the male between-group genetic variance would exceed that for females. As illustrated in Figure 4c, however, the females have the higher F_{st}. Although the males are less

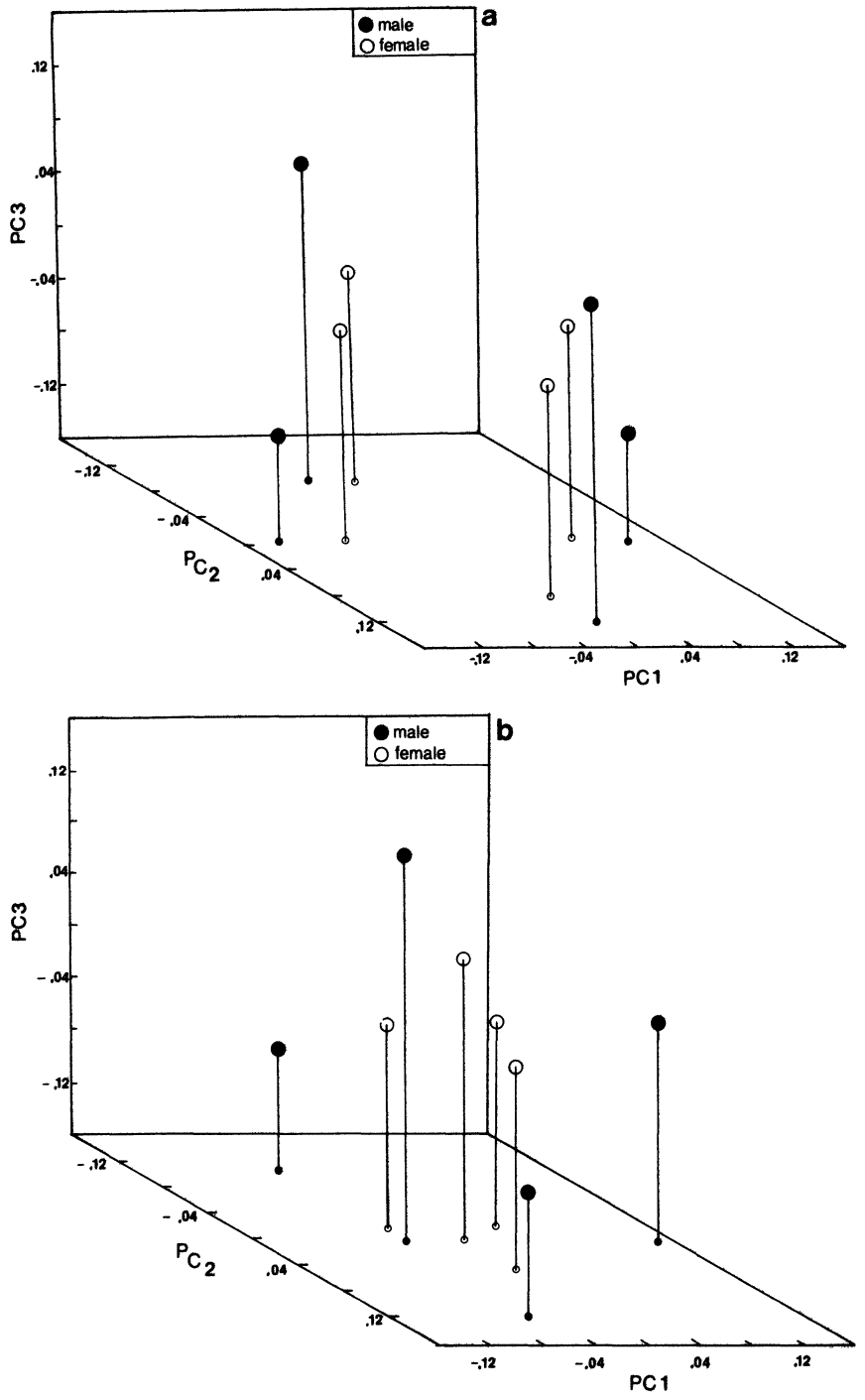

male
female
a
.12
.04
-.04
-.12
PC3
-.12
-.04
.04
.12
PC2
-.12
-.04
.04
.12
PC1
male
female
b
.12
.04
-.04
-.12
PC3
-.12
-.04
.04
.12
PC2
-.12
-.04
.04
.12
PC1

Figure 4.

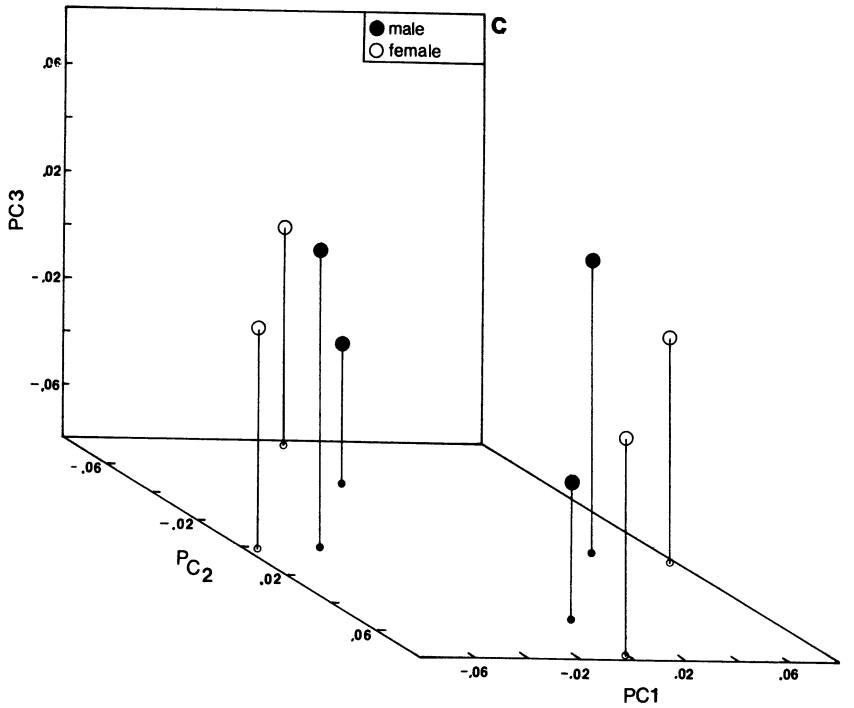


Figure 4. Principal coordinates (PC) plot of three distinctive male–female genetic configurations. (a) Migration model described in Figure 3 (from Konigsberg 1987, Figure 6). (b) Migration model whereby half the females migrate randomly to another village. (from Konigsberg 1987, Figure 5). (c) Migration model described by random male migration (35%) and half the females migrate unidirectionally. (from Konigsberg 1987, Figure 7).

migratory, they migrate in a more dispersive pattern. Consequently, it may be more useful to refer to a sex's mobility within a mating network than to specify migration rate as the sole determinant of male–female differences in genetic variance. This conclusion somewhat weakens the models originally proposed by Lane and Sublett (1972) and by Spence (1974).

In applying this model to west central Illinois skeletal material, we focus on the relationship between migration rate and within-group variance. If males are more migratory, then the ratio of their phenotypic variance to that of females should be greater than 1. This approach assumes that environmental variance is randomly distributed with respect to sex, that villages have a common within-group variance, and that migration is random with respect to kinship (i.e., groups of related kin do not migrate en masse). Using an example from an extant group, Williams-Blangero and Blangero (1990) show that when one or more of these

assumptions are violated the interpretation of such within-group variance ratios is problematic. Because within-group variances are functions of both migration rate and population size, it is likely that the variances must have changed through time. We do assume, however, that there was variance homogeneity across villages within specific time periods. This assumption essentially requires that villages were of a uniform size at given points in time. In the absence of any information to the contrary, we must also assume that there was no kin-structured migration. Using an example from the Urubu-Ka'apor, Aguiar and Neves (1991) show that between-group variances are more effective than are within-group variances in interpreting postmarital residence. While we agree with this finding, we use within-site analyses here because of the numerous problems involved in between-site interpretation of residence pattern (see Konigsberg 1988:477).

The analysis is based on nonmetric cranial traits observed on 621 adult crania from eight sites. Three sites considered are Middle Woodland (Gibson, Klunk, and Ray), three are Late Woodland (Koster, Helton, and Hacker), and one is Mississippian (Schild). The Elizabeth site contains both Middle and Late Woodland components that will be considered separately here. Site-specific data sets for these skeletal series have been generated by Dr. Michael Conner (1984, 1990) and both authors. Because this study focuses on within-site variation, interobserver error should not affect our results. In addition, tests of interobserver error for a sample scored by all three of us indicate a high level of concurrence in scoring procedures (Konigsberg 1987). The five traits that were selected for analysis include: accessory infraorbital foramen, divided hypoglossal canal, obelionic foramen, apical bone, and sagittal sulcus that flexes right. These were chosen from a larger list of 23 features scored on a sample of 1,082 crania, including the 621 studied here. Procedures for trait selection are detailed in Konigsberg (1987, 1988). Because we are considering several traits, we generate the determinant of the within-sex variance–covariance matrices, which is a multivariate generalization of univariate variance. Thus, a ratio of the sex-specific determinants ($|C♂|/|C♀|$) is used to test the hypothesis that male and female variances within sites are equal. Since the distributional properties of this ratio are not well characterized for discrete traits (for continuous traits the ratio is rescaled to produce an F test), a Monte Carlo randomization procedure has been used to assign significance levels.

Table 1 illustrates the ratios of determinants from male and female covariance matrices for the nine skeletal samples under consideration here. Most of the ratios are less than 1, indicating greater female mobility during the Middle and Late Woodland periods, with the Gibson series providing the only exceptional value. Important here is the fact that the strongest evidence for male migration is in the Schild Mississippian cemetery. A shift from patrilocality to matrilocality in parallel with agricultural intensification is suggested, compatible with results from a previous craniometric study (Droessler 1981) and a less elegant nonmetric approach (Buikstra 1975).

Table 1. Ratios of Determinants from Male and Female Covariance Matrices

Site	N males	N females	$\lvert C\sigma^{\lambda} \rvert / \lvert C\varphi \rvert$	Randomization probability
Middle Woodland				
Elizabeth	19	23	0.0800	.1880
Gibson	28	36	1.9407	.2420
Pete Klunk	61	78	0.2147	.0640
Ray	24	22	0.3710	.2040
Late Woodland				
Elizabeth	15	20	0.9430	.4120
Koster	38	33	0.3357	.1100
Emergent Mississippian				
Helton	33	25	0.2288	.1640
Mississippian				
Hacker So.	27	18	0.3905	.5120
Schild Knolls	58	63	3.6798	.1560

Source: Konigsberg, 1988.

WITHIN-GROUP DIFFERENTIATION: SMALL-SCALE DIFFERENCES

As an example of our ability to examine small-scale group differentiation, we focus on the skeletal series excavated from the Pete Klunk mound group, located on the bluffs overlooking the present-day village of Kampsville, Illinois. Of 13 mounds recorded for the site, 5 have been fully excavated and have produced large samples of skeletal remains. Four of these tumuli are associated with diagnostic Middle Woodland artifacts; one dates to the Late Woodland period (Perino 1968, 1973). A microchronology developed by Charles (1985, personal communication 1985), based on ceramic attributes and mound conformation, suggests that the appropriate temporal sequence for the series is 1–7–11–5–8.

The 122 crania that formed the basis of this study were observed by Buikstra (1976). In addition to the five nonmetric traits discussed earlier, postcondylar canal patent and open foramen ovale were also included in the analysis. Procedures for trait selection and scoring were identical to those reported above (see also Konigsberg 1987, 1990b). Because our level of interest is regionally and temporally constrained, we assume that many of our traits are more or less neutral characters, subject primarily to random genetic drift. Even though we do not anticipate trends in neutral traits, population and quantitative genetic theory can be used to generate expectations for temporally sequential populations within a single community. In fact, if we model a single village, sampled at successive points in time, it is clear that neutral trait frequencies will show stronger resemblances

between temporally proximal rather than more distant samples. The specific form of this relationship, which has been presented elsewhere (Konigsberg 1987, 1990b), can be characterized as a first-order autoregression (and see Epperson 1993 for the more complicated space–time autoregressive model under drift and migration). A simple lag matrix can therefore be used effectively to model the expected biological distance between temporal units within a site. Important to this analysis of neutral nonmetric traits is the concept of "lag" and the lag matrix, which is constructed by counting the number of steps (or lag) between two points in a series (Hubert, Golledge, Costanzo, and Gale 1985).

The top portion of Figure 5 presents discrete trait biological distances between skeletal samples from the five Pete Klunk mounds, ordered in temporal sequence according to ceramic data. The biological distance algorithm used here is Balakrishnan and Sanghvi's (1968) B^2. The matrix in the lower left portion of Figure 5 is a simple lag distance matrix that counts the number of temporal "steps" separating the mounds. If the proposed temporal ordering is correct, then there should be positive correlation between the two matrices. As indicated in Figure 5,

	Md 1	Md 7	Md 11	Md 5	Md 8
Md 1	0	0.5636	1.0916	0.9081	1.3833
Md 7	0.5636	0	0.6618	0.6284	1.2606
Md 11	1.0916	0.6618	0	0.7062	1.8059
Md 5	0.9081	0.6284	0.7062	0	0.4424
Md 8	1.3833	1.2606	1.8059	0.4424	0

Lag Matrix

0	1	2	3	4
1	0	1	2	3
2	1	0	1	2
3	2	1	0	1
4	3	2	1	0

Adjacency Matrix

0	0	1	1	1
0	0	0	1	1
1	0	0	0	1
1	1	0	0	0
1	1	1	0	0

r = 0.6228 p = 0.0667 r = 0.6982 p = 0.0167

Figure 5. Discrete trait distances (above), lag distance matrix (below left), and adjacency matrix (below right) for five mounds from the Pete Klunk site.

the correlation is indeed positive, nearly significant at the 0.05 level under an exact permutation test. Under the less stringent requirement that only mounds that are temporally adjacent are more similar, the matrix illustrated in the lower right of Figure 5 is generated. In this example, the test is significant with a probability value of .0167 under the exact permutation test.

These results support the notion that at least these five mounds represent temporally successive sampling of the community that buried at the Pete Klunk site. There is no support for more elaborate models that specify simultaneous use of several mounds by a Woodland community.

THE DEFINITION OF BOUNDARIES

While the above analyses suggest important aspects of past population structure at the within-group level, it is the between-group level that is probably of greatest interest to archaeologists. Much work has focused on the definition of archaeological boundaries from spatial distributions of artifact styles or the geographic organization of site types (e.g., Farnsworth and Asch 1986; Farnsworth et al. 1991). However, boundaries can also be inferred through the study of past human skeletal features. In that the mechanisms for biological evolution are more readily understood than the processes defining culture change, human morphology can provide boundary definitions that are more easily interpreted than other classes of archaeological evidence. In this section we explore boundary definition for the full complement of west central Illinois skeletal series indicated in Figure 1.

Before developing the archaeological example, however, we would like to focus on the distinction between model-bound and model-free approaches to the study of population genetics (Relethford and Lees 1982). This distinction is relevant to our discussion because both strategies have been applied by researchers in analyses of prehistoric skeletal material. Briefly, model-bound strategies are those in which an underlying population genetics model provides a basis for estimating parameters, such as Sciulli and Mahaney's (1991) estimation of effective population size and amount of selection under Lande's (1976) model of evolution by drift and selection. Similarly, Konigsberg and Blangero (1993) apply a multivariate generalization of Lande's method (Lande 1979; Lofsvold 1988) to estimate the amount of drift necessary to explain the observed morphological differences between a Melanesian and a Polynesian skeletal sample. Both the Sciulli and Mahaney (1991) and the Konigsberg and Blangero (1993) studies arrive at explicit estimates of population genetics parameters, thus conforming to the definition of model-bound approaches.

The investigation strategies used in this chapter contrast with model-bound

approaches in that while they are justified in terms of population and quantitative genetics theory, they do not estimate explicit genetics parameters. In this sense, they are model-free. Model-free approaches can be quite useful when population genetics models cannot easily be adapted to the problem at hand or when assumptions of a possible model are not suitably met. In the following critique, we argue from one previous example (Pardoe 1991) that current model-bound approaches to identifying boundaries are too poorly developed to be useful. Our archaeological study then provides a more satisfying result, based on a model-free analysis.

A Critique of Model-Bound Approaches to Boundary Definition

Pardoe (1991) has recently attempted to apply isolation-by-distance models to examine boundary definition between Australia and Tasmania. To address this issue, he calculated Smith's MMD between a single Tasmanian skeletal sample and a number of Australian series. The pattern of biological and geographic distances was then interpreted in terms of several hypothetical relationships between geographic and biological distances. Our critique of this approach is based in population genetics theory.

We will consider only the most simple isolation-by-distance model, a unidimensional stepping-stone of infinite length. Crow and Kimura (1970:469–477) show that the gene frequency correlation for two populations located k units apart is approximately:

$$r_k \approx \exp\left(-k\left[\frac{2m_\infty}{m_1}\right]^{1/2}\right) \tag{1}$$

where m_1 is the short-range migration rate (proportion of each subpopulation that moves to one of the two adjacent subpopulations each generation) and m_∞ is a systematic pressure, which may represent mutation, selection, or a long-range migration rate. The covariance between standardized gene frequencies (i.e., divided by $p(1-p)$, where p is the average gene frequency across all populations) is then:

$$\text{cov}_k = F_{st}\exp\left(-k\left[\frac{2m_\infty}{m_1}\right]^{1/2}\right) \tag{2}$$

where F_{st} is the standardized gene frequency variance, which is also equivalent to the mean within-group kinship, or the correlation of genetic values in a subdivision relative to the total population (Wright 1969:294). The expected genetic distance between two populations k units apart is:

$$d_k^2 = 2F_{st}\left(1 - \exp\left(-k\left[\frac{2m_\infty}{m_1}\right]^{1/2}\right)\right) \tag{3}$$

Generalizing to the simplest multivariate quantitative trait case, where there are t traits, each with complete heritability, full genetic independence with all other traits, and unit variance for each trait:

$$\frac{d_k^2}{2t} = F_{st}\left(1 - \exp\left(-k\left[\frac{2m_\infty}{m_1}\right]^{1/2}\right)\right) \tag{4}$$

Using more traditional symbols, where $a = F_{st}$, $d = k$, and $b = (2m_\infty/m_1)^{1/2}$:

$$\frac{d_d^2}{2t} = a(1 - e^{-bd}) \tag{5}$$

which agrees with Relethford's (1980) equations 10 and 11. Pardoe (1991:7) incorrectly suggests that Smith's MMD (a non-Euclidean measure of genetic distance) for a unidimensional model should equal e^{bd}/a. This cannot be correct, for at a spatial distance of zero, Pardoe's equation indicates that the expected genetic distance is $1/a$. In other words, Pardoe's equation predicts that a population will have a nonzero genetic distance from itself. Additionally, the derivation of our equation 3 from equation 2 is predicated on the assumption that the genetic distance measure is a Euclidean distance, which is not the case for Smith's MMD.

To the isolation by distance model we can now add a barrier to short-range migration. We assume again that there is a infinite chain of subpopulations, but that a boundary exists such that there is no short-range migration across the single boundary. There are two different conditions that we can consider for this boundary. In the first situation, we assume that the boundary has always existed. In this case, equation 5 still predicts the distances within the two infinite regions, but between the two regions the distance is a constant equal to F_{st} (or a).

Thus, when there is a long-standing boundary to migration, the two regions will be subject to isolation by distance, while across the two regions there will be no spatial relationship to genetic distances. As a consequence, if we examine genetic against geographic distance there may be a discontinuity in the graph at the point where a boundary existed, and then the genetic distance will be constant against increasing geographic distance. However, because this plateau is the asymptote to the ordinary isolation by distance model, it may be very difficult to detect a boundary using a plot of genetic against geographic distances. Additionally, if many of the sites fall on one side of the boundary, then the graph of genetic against geographic distances will be dominated by genetic distances that are (within sampling error) equal to a constant. Thus, a poor fit of an isolation by distance model in a study may indicate either that there was no spatial pattern to migration, or that a number of undetected boundaries existed in the region.

In a second possible scenario, we can envision an example where a boundary has recently been imposed across a region previously characterized by isolation by distance. Pardoe (1991:9) correctly suggests that in such a situation differentiation by genetic drift would lead to an increase in genetic distance across the boundary. The dynamics of such a model are, however, rather complex, because the rate at which the distance increases is a function of the migration rate, the systematic pressure, the subpopulation sizes, and the number of generations since the boundary appeared. In any event, in the limit the pattern of distances will approach the previous case, where sites on either side of the boundary have a distance equal to F_{st} (or a). If the boundary was difficult to detect in the previous case when the boundary had always existed, then we expect that the task of boundary definition would be even more difficult in the latter case of a recent division. As a consequence, from biological distance data, using a model-bound approach, it would be virtually impossible to establish that a boundary had been established at any point in the past.

Wombling: A Model-Free Approach

Barbujani, Oden, and Sokal (1989) have recently described a model-free approach to detecting boundaries from spatially observed biological data. They refer to their method as "wombling" in deference to W. H. Womble (1951), who first published the basis for the method. With only very minor modifications, we follow Barbujani et al.'s method and apply it in an analysis of human biological data from prehistoric west central Illinois.

Wombling operates by attempting to locate regions across a map of biological variables where there are large changes in the biological data. These discontinuities are then taken as representing possible boundaries that limit exchange. In an archaeological setting, this could represent the exchange of artifacts or the flow of migrants to and from adjacent villages. Barbujani et al. (1989) show, based on computer simulations of spatial gene frequency distributions, how wombling can detect the existence of such boundaries. They further suggest that phenotypic data could be used to detect boundaries.

In order to apply wombling to prehistoric west central Illinois, we examined the frequency of eight cranial nonmetric traits across 14 sites from the area. These data included: coronal ossicle, divided hypoglossal canal, postcondylar canal patent, open foramen ovale, obelionic foramen, apical bone, sagittal ossicle, and sagittal sulcus that turns right. Selection of traits and scoring procedures are as indicated in previous sections. Because these traits are not independent, we first extracted eight new variants by eigenstructure analysis. We assume that the occurrence of nonmetric traits is determined by the imposition of a threshold on a standard normal distribution. Within any site, the proportion of trait occurrence

can consequently be represented as z, where z is the standard deviate that cuts off a tail area from the normal distribution, which is equivalent to the trait's frequency. The matrix Z of threshold values is then an n by k matrix (n sites by k traits). Because the traits may not be phenotypically independent, we can express the pooled within-group correlation as T, where T is a k by k matrix of tetrachoric correlations. If V is a matrix of eigenvectors of the T matrix, and L is a diagonal matrix of the eigenvalues, then we define the matrix C as:

$$C = ZVL^{-1/2} \tag{6}$$

where C is now an n by k matrix of traits that are uncorrelated at the within-site level (see Konigsberg 1990b: eq. 12).

Since there are temporal trends for some nonmetric trait frequencies in this region (Konigsberg 1990b), we regress the new trait vectors (from the C matrix) on median site date, and then express the traits as deviations from this regression. Finally, these deviates can be used to interpolate spatial maps, as shown in Figure 6. These maps were formed by "kriging" using the program SURFER, and averaging site values across multiple components within single sites. The decision to average across temporal components is not particularly contentious, because local continuity has been demonstrated for most of the components we have averaged (see Buikstra 1977; Conner 1990; Droessler 1981; Konigsberg 1987) and because temporal trend has been removed by regression. Given the nature of the coding and the analysis, high areas in the maps indicate locations where a correlated set of nonmetric traits is either very common or very rare (i.e., peaks represent extreme values).

The biological maps represented in Figure 6 can now be used for the womble analysis. For each "tile" within each map, we find the slope from the middle of the tile in the x and y directions. Barbujani et al. (1989) show that these slopes are:

$$\begin{aligned} \frac{\partial f}{\partial x} &= b - a + 0.5(a - b + c - d) \\ \frac{\partial f}{\partial y} &= d - a + 0.5(a - b + c - d) \end{aligned} \tag{7}$$

where a, b, c, and d represent the trait values starting at the bottom left corner of the tile and moving in a counterclockwise direction to the other three corners. Barbujani et al. (1989) then take the magnitude m of the vector defined by these two slopes as the maximum slope of the tile:

$$m = \left[\left(\frac{\partial f}{\partial x} \right)^2 + \left(\frac{\partial f}{\partial x} \right)^2 \right]^{1/2} \tag{8}$$

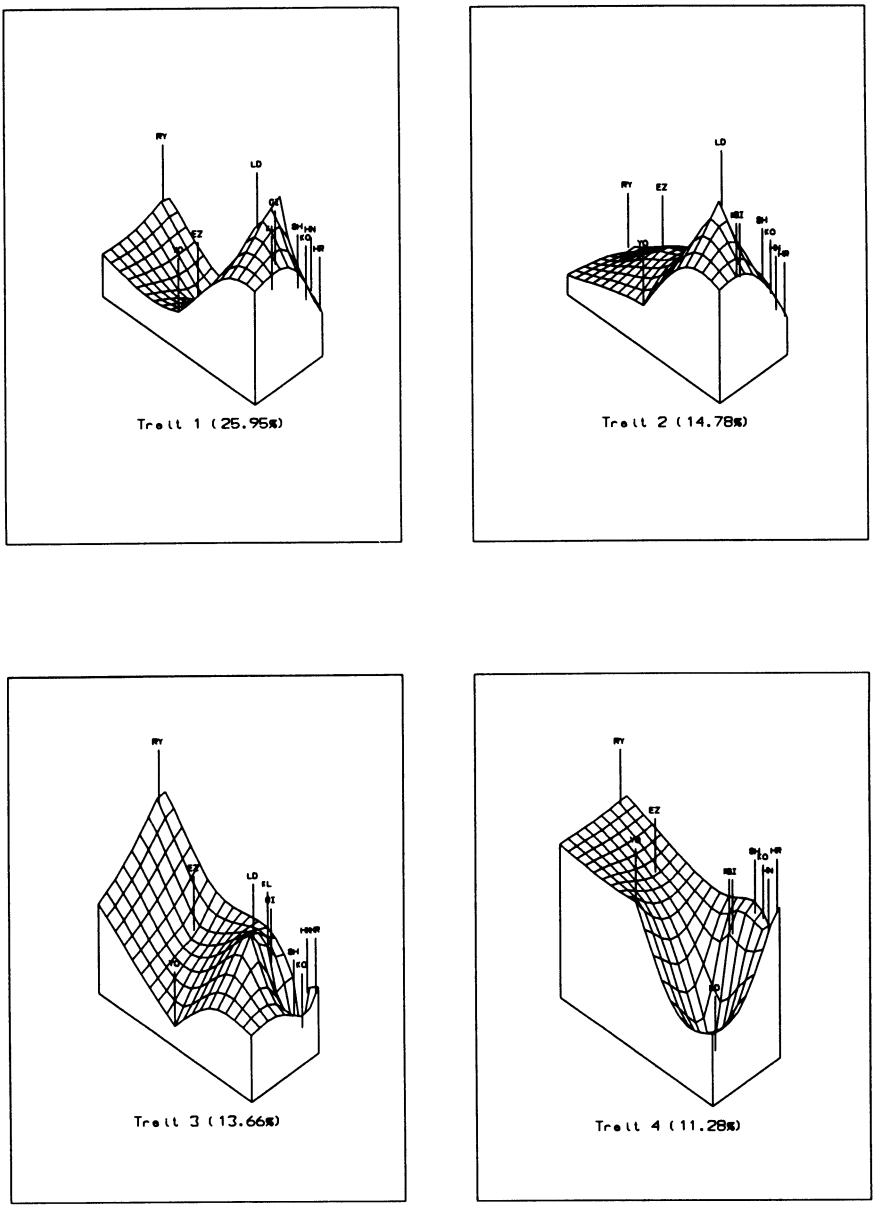


Figure 6. Map of eight derived traits against spatial locations in west central Illinois, with percent variance indicated in parentheses.

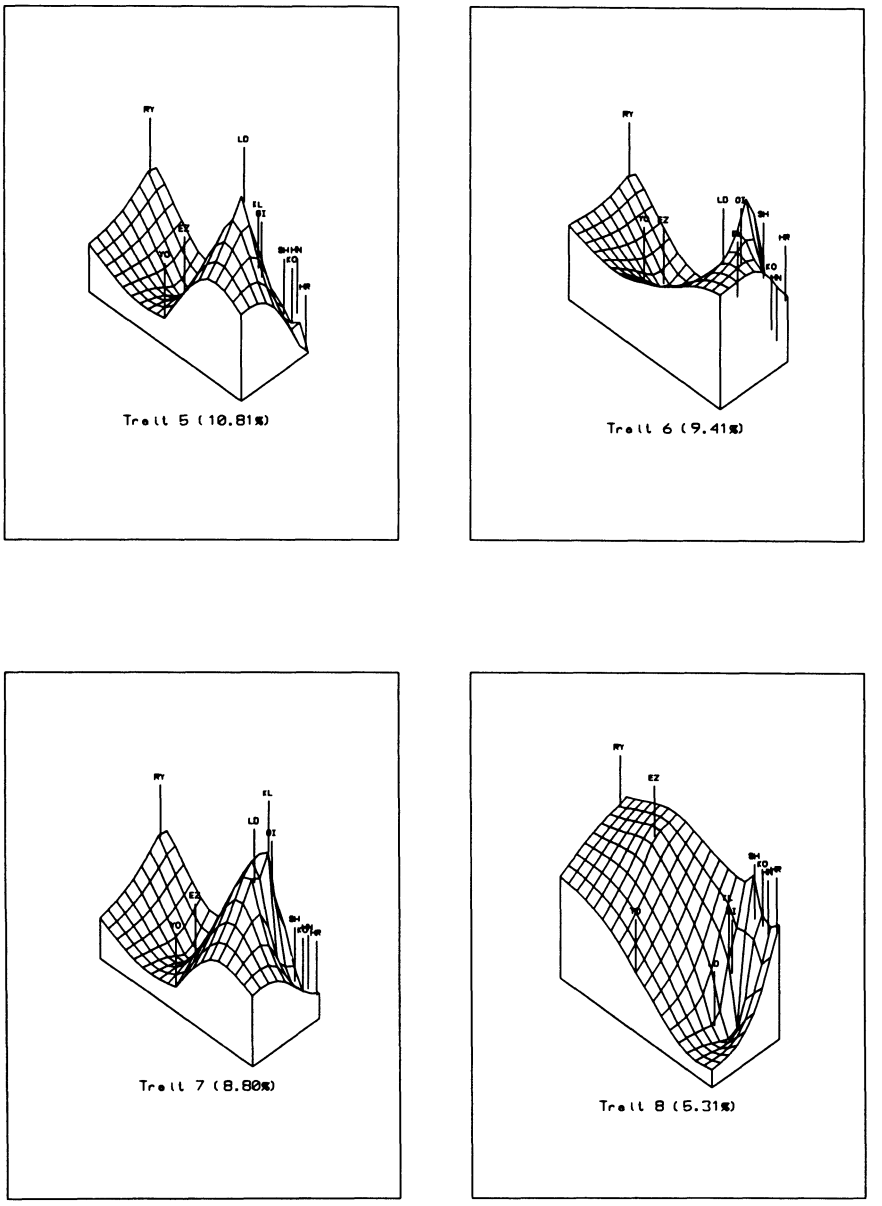


Figure 6. *(Continued)*

They then suggest that these slopes can be averaged across maps, possibly using some form of weighting scheme. For our analysis, we weight the average using the proportion of total variance contained in each eigenvector of T.

In addition to determining the maximum slope of each tile, we can also use Barbujani et al.'s method to determine the direction of each slope. They noted that the direction (measured in radians) is:

$$\theta = \arctan\left[\frac{\left(\frac{\partial f}{\partial y}\right)}{\left(\frac{\partial f}{\partial x}\right)}\right] \tag{9}$$

and also indicate that 180 degrees (or π radians) should be added to the angle if the partial derivative with respect to x is negative. To this stricture should also be added the condition that 360 degrees (or 2 π radians) be added to the angle if the partial derivative with respect to y is negative while the partial derivative with respect to x is positive.

After determining the angle of the maximum slope for each tile within each map, these angles can be averaged. As Barbujani et al. note, if two vectors are pointing in opposite directions, then their average will cancel one another. Consequently, Barbujani et al. recommend doubling all of the angles, finding the x and y coordinates for the end of each vector, averaging all of these coordinates within one tile, converting the vector end back to an angle, and then dividing this angle in half. Their procedure will provide angles that are between 1 and 180 degrees. To find the x and y coordinates for each vector we use:

$$\begin{aligned} x &= \cos(2\theta)v \\ y &= \sin(2\theta)v \end{aligned} \tag{10}$$

where v is the proportion of total variance contained in each eigenvector of T.

Figure 7 illustrates the average vectors for each tile in the map. Barbujani et al. (1989) suggest that those tiles whose vectors have the greatest length and are positioned adjacent to one another should be considered to represent boundaries. Adjacent tiles are those that share an edge or a corner. They further suggest that connected tiles should probably have vectors that share a similar orientation. Figure 8 shows the connectivity of adjacent tiles that have vector lengths in the top 10%, and whose angles are within 15 degrees of an adjacent tile. Figure 9 indicates the less stringent condition of being in the top 40% but with only a maximum of a 6-degree difference between adjacent vectors. These two figures indicate quite clearly that the site furthest north (Ray site) should not be included with the remaining sites. Figure 9 further suggests that the Yokem and Elizabeth sites may be across or in boundary zones that demarcate a southern from a northern series of sites.

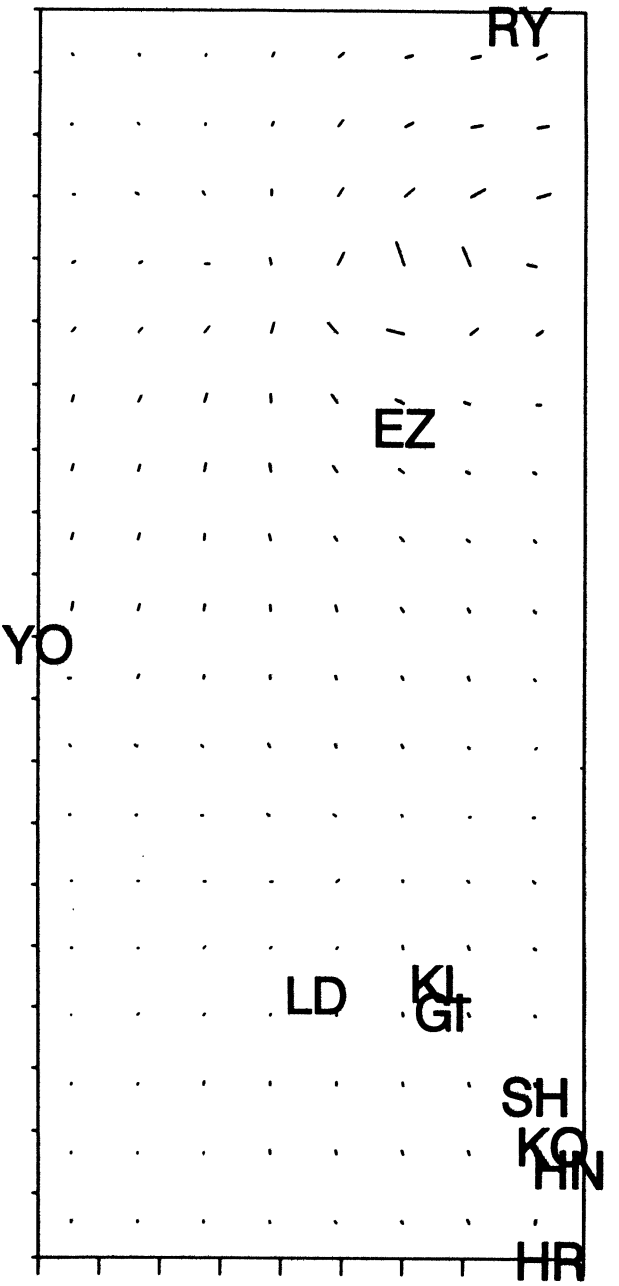


Figure 7. "Wombled" average surface with site locations marked. The tick marks on the graph represent 5-km increments. The length of each vector indicates its magnitude (i.e., the slope of the "tile" in the average surface), while the orientation gives the slope (between 0 and 180 degrees).

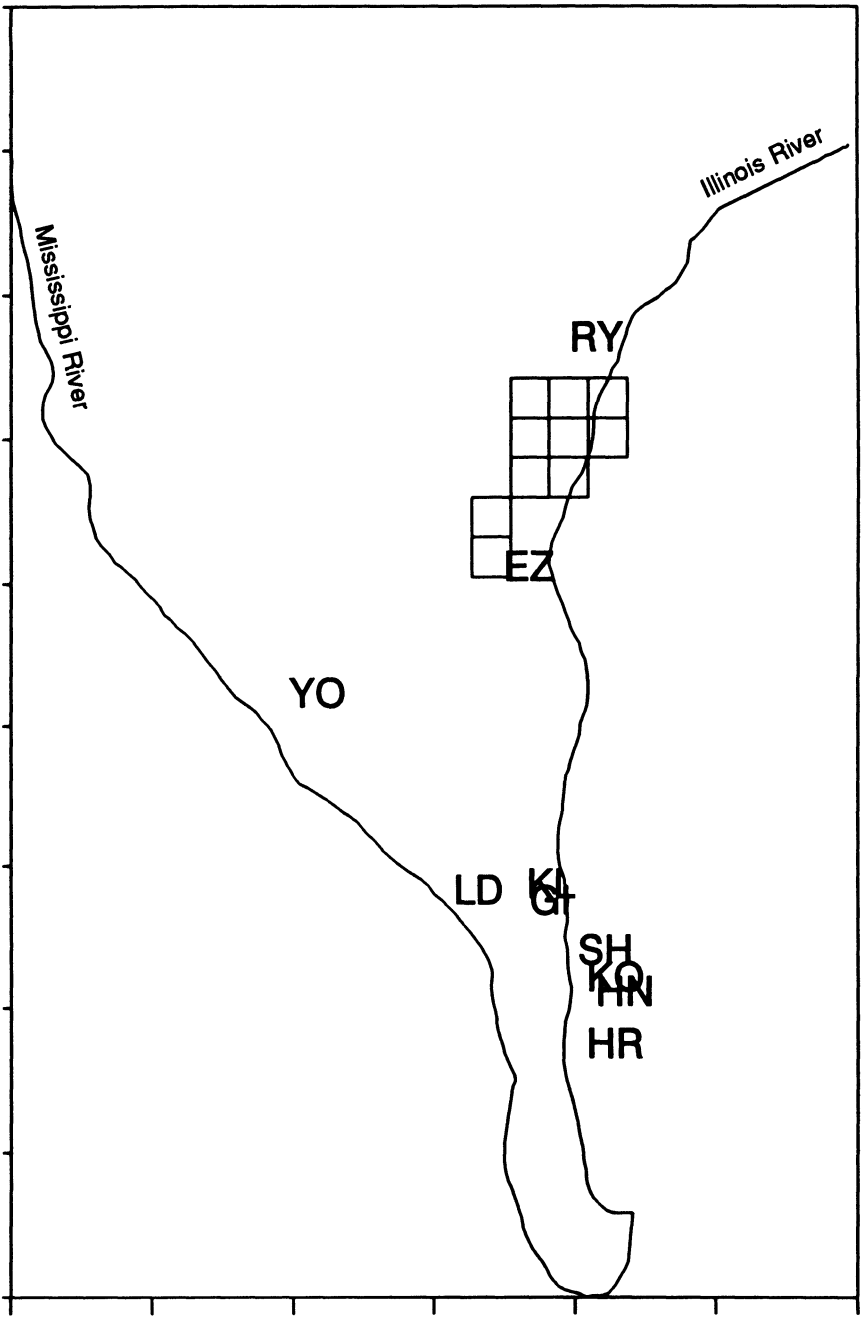


Figure 8. "Tile" connectivities at the upper 10% of vector magnitude and with divergence of no greater than 15 degrees (tick marks represent 20-km increments, and the Illinois and Mississippi rivers are shown for orientation).

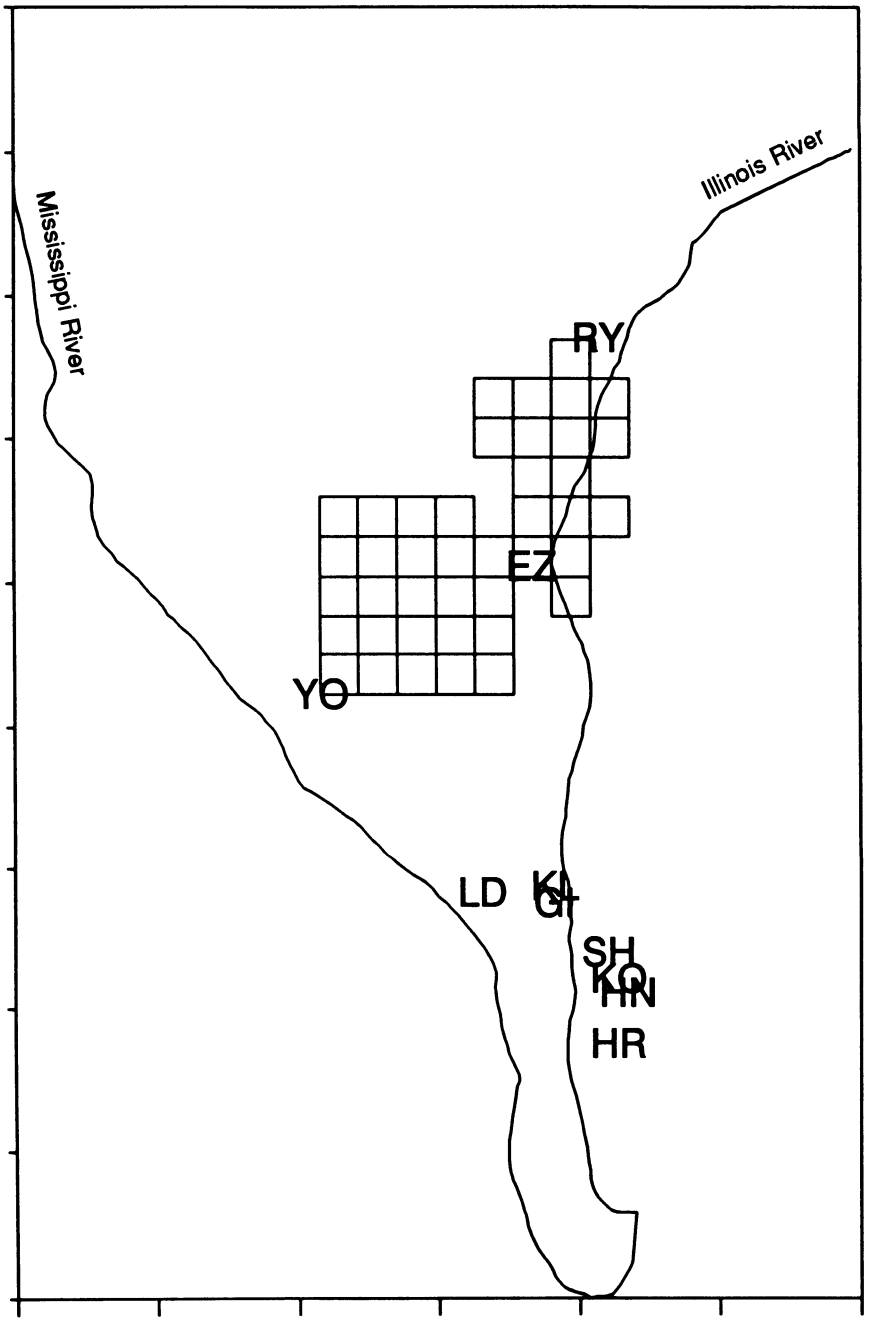


Figure 9. "Tile" connectivities at the upper 40% of vector magnitude and with divergence of no greater than 6 degrees.

The Middle Woodland Ray site is located in the central Illinois River valley (Flotow 1983), within a region thought to differ from the lower Illinois Valley on numerous stylistic grounds, including material culture and site organization (Caldwell and Hall 1964; Charles, Leigh, and Buikstra 1988). The presence of a boundary between Ray and the other sites therefore reaffirms other arguments based on archaeological evidence. The Elizabeth site, however, is located at the junction of the lower and central Illinois valleys, sharing Middle Woodland artifact and site organization styles with both areas, most closely resembling lower Illinois Valley sites (Bullington 1988; Leigh 1988). An apparent genetic boundary between the Elizabeth site and the lower Illinois Valley sites is therefore significant in interpreting regional histories. Similarly, the Late Woodland component of the Yokem site is characterized by Farnsworth et al. (1991) as being on the northwest frontier of Jersey Bluff culture. Our analysis indicates that while cultural affiliation may be with southeastern sites, the biological affiliation of peoples burying at Yokem site was clearly distinctive. The lack of congruity in these cultural and biological data underscores the importance of human osteological data in investigations of archaeological boundaries.

DISCUSSION

Analysis of human skeletal remains from archaeological contexts is a relatively old practice among physical or biological anthropologists. Curiously, at the same time, population and quantitative geneticists tended to consider such material unimportant, presumably because they viewed the area as substantially "data poor." Fortunately, this perception is rapidly changing. To date, there have been a number of major studies using traditional craniometry, archaeological samples, and new population genetics or statistical approaches to interpret past human evolution (Lynch 1989; Relethford 1994; Relethford and Harpending 1994; Sciulli and Mahaney 1991; Sokal, Uytterschaut, Rosing, and Schwidetzky, 1987). With the rapid development of strategies for extracting, amplifying, and analyzing ancient DNA, we also expect that the field of "molecular archaeology" will be an expanding one. But, lest we lose site of the human cultural element behind this momentum, we need to return to questions concerning the archaeology of the peoples we are studying. In this concluding section we briefly review the developments that have led to the present state of affairs in the skeletal biological analysis of past peoples, and then place our work within this context.

Attempts to infer population origins and relationships from skeletal features do, of course, long predate the New Archaeology. In fact, the roots of both American archaeology and physical anthropology are firmly embedded in antiquarian inquiries about ancestral relationships of Native American peoples. Centuries of conjecture by Euro-American explorers, settlers, traders, and even

United States presidents were followed during the early nineteenth century by more rigorous approaches to investigations of human remains and their archaeological contexts (Willey and Sabloff 1980:12–33). Questions raised at that time were often of a very general nature: Who were the ancestors of living Native Americans? From what continent did these ancestors emigrate?

In physical anthropology, initial scientific study of these issues culminated in the landmark treatise by Samuel Morton. Basing his conclusions on cranial measurements and related observations, Morton's (1839) *Crania Americana* divided New World populations into two families, whom he said had more in common with one another than with any other people in the world. Furthermore, he linked these Americans with ancestors from Asia, rather than with the Norse, Israelites, Hindus, or other groups speculatively associated with Native Americans. The fundamental unity of Native American peoples and their Asian ancestry are two concepts that have withstood the test of time.

Within the early twentieth century, archaeological concern for chronology further encouraged the excavation of mortuary sites, whose contents physical anthropologists used to painstakingly reconstruct large-scale migrations (Dixon 1923; Neumann 1952). Similarly, population movement was invoked by archaeologists to explain observed patterning in material culture (Wray 1952). Mid-twentieth-century developments, including radiocarbon dating and the New Archaeology, diverted attention from sweeping migrations to more focused, regional approaches. As a reaction to the previous attempts at reconstructing large-scale population movements, more recent investigations have tended to emphasize regional continuity and migration only at the level of intervillage or band. This relatively new focus has engendered examination of such small-scale issues as familial relationships and postmarital residence (Birkby 1982; Buikstra 1976; Corruccini 1972; Droessler 1981; Kennedy 1981; Konigsberg 1987, 1988; Lane and Sublett 1972; Spence 1974).

We see our work as fitting comfortably within the current emphasis on studying archaeological skeletal material within a local or regional setting. The days of trying to document large-scale migrations and tie these to past cultural "developments" are fortunately over, though as Anthony (1990) warns we should not entirely dispatch with looking for past larger-scale migrations. In this chapter we have demonstrated the salient role of paleopopulation structure information in the investigation of ancient human behavior. Postmarital residence, within-site mortuary behavior, and between-site boundary development are all amenable to investigation. The ability to interpret such small-scale changes is possible only through the development of population genetics models and the availability of large samples of skeletal materials from geographic regions. In addition, the archaeological context remains a vital link between our biological interpretations of past peoples and the social processes that structured their interactions. Past skeletal remains can of course be used to impassionately interpret human biolog-

ical evolution, but it is only through the addition of archaeological data to our bioanthropological analyses that we can begin to sketch past human social and cultural histories.

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Chapter 10

An Osteological Perspective on Prehistoric Warfare

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Identifying and measuring intergroup relations represent significant, but intractable, problems for researchers dealing with prehistoric peoples. Human skeletons hold a great potential for providing otherwise unattainable information about interactions among ancient societies, including antagonisms that led to outright warfare. As used here for prehistoric horizons, warfare refers to purposeful violence calculated to advance the ambitions of separate political factions, regardless of who was involved, the regularity of fighting, the numbers of participants, or specific combat tactics. Despite the rather obvious connection between skeletons and combat casualties, osteological analyses have made few contributions to the study of conflict among prehistoric peoples (for a well-known exception see Wendorf [1968]).

This unfortunate situation has changed recently for the North American midcontinent. Well-documented skeletons are now available that demonstrate the existence in prehistoric times of intergroup fighting—specifically multiple ambushes and occasional massacres—that led to many deaths in some groups. These findings provide a context for interpreting numerous examples of intentionally inflicted lethal trauma that have been described, typically as isolated specimens, over the past century. Collectively, these data permit a narrowing of an unaccept-

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ably wide range of scholarly opinion about the casualties of war in pre-Columbian eastern North America.

Archaeological evidence of warfare in pre-Columbian times is of special interest because several anthropologists have questioned whether the nature of warfare described by early historic chroniclers and modern ethnographers is applicable to precontact settings (Ferguson 1992; Ferguson and Whitehead 1992). These documented peoples inhabited a turbulent zone surrounding expanding foreign states, particularly European powers, where long-established ways of life were subjected to the unprecedented challenges of great population loss, group dislocation, an uneven distribution of firearms, and incorporation into the political and economic orbits of distant, strong, and contentious polities.

A closer examination of archaeological evidence for prehistoric warfare is important because conflict, or its management, is implicated as an essential element in many models of sociopolitical evolution (Carneiro 1970, 1981, 1994; Cohen 1984; Fried 1967; Service 1971; Webster 1975). Unfortunately, studies of ancient warfare all too often fail to go beyond the details of defensive works, weaponry, wounds, and representational art. A decade ago, Vencl (1984) called attention to the scarcity of behaviorally oriented archaeological studies of warfare, the difficulties of recognizing evidence for prehistoric conflict, and the resulting overemphasis on peaceful ancient Europeans, an image that differs markedly from early written records and modern ethnographic analogs (see Childe 1941). Assessments of prehistoric warfare in North America are likewise hamstrung by the low archaeological visibility of violent conflicts between small-scale societies.

PRE-COLUMBIAN WARFARE

Considering the lack of attention directed toward evaluating evidence of prehistoric warfare in North America, it is not surprising that there are marked discrepancies in scholarly opinion about the objectives for fighting and its impact on antagonists (Dickson 1981; Gibson 1974; Gramly 1977, 1988; Larson 1972; Turner and Santley 1979). Some scholars view war primarily as a means of gaining revenge or of advancing a man's prestige; it had few serious consequences beyond occasional casualties. Other researchers emphasize its central role in population spacing, particularly with regard to land, meat, or hides; differential group survival; varied regional occupational histories; and a development of more complex forms of sociopolitical organization. Several archaeologists recently have highlighted warfare's contribution to highly dynamic Eastern Woodlands sociopolitical and demographic landscapes, which are only now beginning to be delineated through geographically broad-scale studies and increasingly fine-grained cultural chronologies (Anderson 1990, 1994; DePratter 1991; Dye 1990; Milner, Anderson, and Smith 1991). Much like the situation elsewhere, warfare in

eastern North America is viewed as an integral part of the development of organizationally complex societies by some, but not all, researchers (Anderson 1990, 1994; Rountree 1989:150; cf. Peregrine 1992).

Much of the controversy over the significance of pre-Columbian warfare stems from widely divergent views on the disruptive effects of hostilities. Opinion is polarized over even an easily discernible and potentially measurable consequence of warfare: combat casualties.

Extrapolating from early historic accounts of Eastern Woodlands peoples, Jennings (1975:159) concluded that "the motives for aboriginal war appear to have been few, and the casualties slight." The prevailing pattern was one of a "genuinely endemic state of sporadic intertribal violence" (1975:153). Women and children were spared, a "merciful custom," except for a few individuals killed in the heat of combat (1975:151–152, 169). Jennings's sanguine interpretation has been called into question (Thornton 1987:47–48), but it is commonly believed that prehistoric warfare's contribution to mortality was minimal, even among the immediate predecessors of the bellicose historic Iroquois (Engelbrecht 1987).

Jennings (1975) was largely reacting to Kroeber's (1939:148) Hobbesian portrayal of warfare as "insane, unending, [and] continuously attritional"; furthermore, "it was so integrated into the whole fabric of Eastern culture . . . that escape from it was well-nigh impossible." In fact, Hobbes (1960:82–83) referred to the Americas, many parts of which he regarded as having "no government at all," when commenting on a state of war "of every man, against every man," where people endured "continual fear, and danger of violent death," and life was "solitary, poor, nasty, brutish, and short." Such characterizations are typical of persistent, self-serving attitudes toward so-called savages that have been widely accepted since the earliest encounters between Europeans and Native Americans (Jaenen 1976).

Following in the Hobbesian tradition, Cook (1973:505) argued that the "aboriginal Indian was physically and culturally adjusted to his environment and that intertribal warfare was the only real obstacle to population increase, or at least maintenance." Cook (1946, 1973) viewed pre-Columbian warfare in New England and elsewhere as a Malthusian positive check restraining population growth (see Malthus 1970).[1] Kroeber (1939:148) was quite clear about his perspective on this issue: "warfare, with its attendant unsettlement, confusion, destruction, and famines, was probably the most potent reason why population remained low in the East."

It should be noted that Kroeber's (1939:148) and Cook's (1973:505) emphasis on the dampening effects on population growth of combat and its sequelae is distinct from a controversial argument developed by Divale and Harris (1976). The

[1]Malthus (1970:81–85, 103, 250) included war as one of the positive checks on population increase for his "savage or hunter" and "shepherd" (also "barbarians") "state[s] of mankind," and he clearly felt that it applied to his own time as well.

latter view warfare as a critical element of their "male supremacist complex" that links rampant male aggressiveness, ferocity enhancing group survival, the abduction of women from enemies, and female infanticide or neglect, which regulates population numbers. Warfare's regulatory role, however, is by no means universally accepted (Beckerman 1991).

Despite such uncertainty about conflicts in prehistoric times, North American specialists generally agree that warfare changed after the arrival of Europeans. Fighting intensified and new reasons for conflict arose as Native Americans became progressively embroiled in the affairs of steadily encroaching foreign powers. Similar contact-related disruptions of indigenous ways of life accompanied by greater intergroup fighting have been noted for other cultural settings (Ferguson 1990a, 1992; Ferguson and Whitehead 1992; Ross 1980).

It would be fair to say that authoritative opinion is deeply divided over the impact of pre-Columbian conflict, as illustrated by the extreme positions taken on combat losses. To some scholars, warfare's consequences were trivial; to others, they seem devastating. Intermediate positions, of course, also abound. Yet all such positions lack the empirical support that only archaeological excavations can provide. Because such information is lacking, it should come as no surprise that there is little agreement over warfare's influence on population distribution, community size, social integrating mechanisms, access to essential resources, and group survival.

MIDCONTINENTAL CASE STUDIES

Recent salvage excavations in Illinois and South Dakota provide hitherto unavailable information on intergroup conflict that engulfed late prehistoric sedentary horticulturalists who inhabited resource-rich river valleys in the continental interior (Milner et al. 1991; Milner and Smith 1990; Willey 1990; Willey and Emerson 1993). As a result of this work, archaeologists now have vivid pictures of violence that plagued these peoples, threatening their very existence.

Small-Scale Attacks

Many victims of violence were found buried in an Illinois Oneota cemetery, Norris Farms #36, excavated in the mid-1980s. This burial area and a nearby village, which date to ca. A.D. 1300, were located in the central Illinois River valley on the western bluff overlooking the floodplain. The mortuary and habitation areas are described fully elsewhere (Santure, Harn, and Esarey 1990), as are the skeletons (Milner et al. 1991; Milner and Smith 1990).

The completely excavated Oneota cemetery, a low, oval mound, contained the remains of 264 people. The mound appears to have been used for a relatively short

time, probably on the order of a few decades. Graves were closely spaced, nearby pits were similarly oriented, and features were rarely superimposed. Bodies were treated reasonably consistently, and much of the variation was attributable to the circumstances of death that affected the state of skeletal articulation. The artifact assemblage was modest, items were distributed throughout the cemetery, and grave goods were found with males and females as well as the young and old. Both sexes were well represented in the cemetery, and the age-at-death distribution was consistent with mortality schedules generated from demographic models (Milner, Humpf, and Harpending 1989; Paine 1989). In short, there are no archaeological or osteological reasons to believe that the cemetery sample is anything other than an accumulation of deaths from a traditional community.

The inclusion of many victims of violence—16% (N = 43) of the total sample—makes this cemetery unusual.[2] This figure is probably an underestimate because of difficulties in consistently recognizing signs of violent death. Trauma lacking evidence of healing, cuts on bones from body mutilation, and marks from carnivore gnawing were present on these skeletons, which usually exhibited more than one kind of damage.

Unhealed trauma included projectiles that had lodged in, or had penetrated through, bones. Other kinds of injuries also produced distinctive perimortem fractures, such as large holes in crania made by celts, a common woodworking tool (Figure 1). The locations of unhealed wounds showed that people were struck on their fronts, sides, and, often, their backs. Bones of the cranium, upper limb, and trunk were the most frequently affected parts of the skeleton. Reasonably complete skeletons often exhibited more wounds than necessary to cause death.

The bodies of victims often were mutilated. Multiple incisions around the summits of crania, especially on frontal bones, show that 14 people were scalped (Figure 2). Eleven others were decapitated; they were missing crania and the upper cervical vertebrae were cut. Three decapitated people, as well as five additional skeletons, had cut postcranial bones other than cervical vertebrae, indicating body dismemberment. Scavenging carnivores gained access to at least 30 corpses, as shown by splintered and punctured bone cortices and gouged cancellous bone (Milner and Smith 1989).

Most of the people who were killed—41 of 43 victims—were over 15 years old at the time of death. They ranged from teenagers to the elderly, and collectively represented 34% of all adults in the cemetery. Women were as likely to be killed as men. Determinations of sex could be made for 36 of 41 adult casualties, and they comprised 35% and 29% of all males and females, respectively.[3]

[2]Norris Farms appears to be atypical in terms of the numbers of individuals who died violently, but only a small fraction of all excavated prehistoric cemeteries have been the subject of systematic study.

[3]These figures are based on skeletons with distinctive sex-specific pelvic or cranial characteristics.

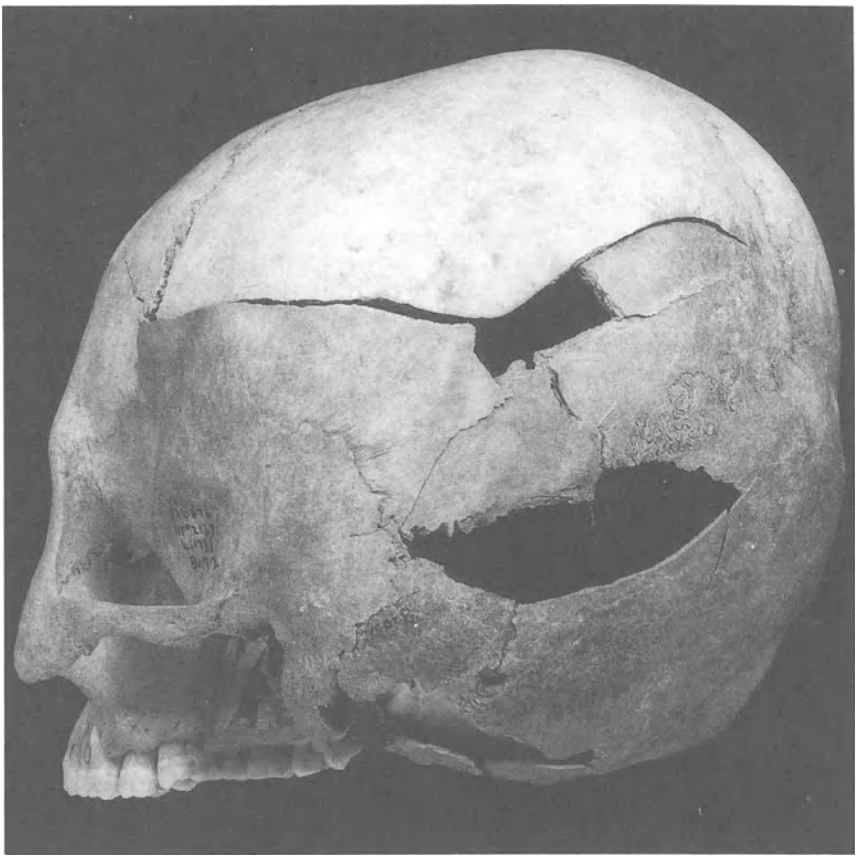

Figure 1. Cranial fractures in a Norris Farms individual who also was scalped (Skeleton 72).

Debilitating conditions were common among the group who were killed. They had active infections affecting their skeletons, dislocations of major joints, and partially healed bone fractures. Of 24 individuals with more than three-quarters of their bones present, 58% displayed such conditions. Therefore, most people who died in attacks had disabilities that would have impeded their ability to flee danger or fight back.

Victims were buried throughout the cemetery, and the amount of time between death and interment varied greatly. Differences in the duration of body exposure are indicated by variation in carnivore damage and skeletal disarticulation. Some corpses were intact when buried, although many skeletons showed signs of scavenger damage. Other bodies were partially or completely disarticu-

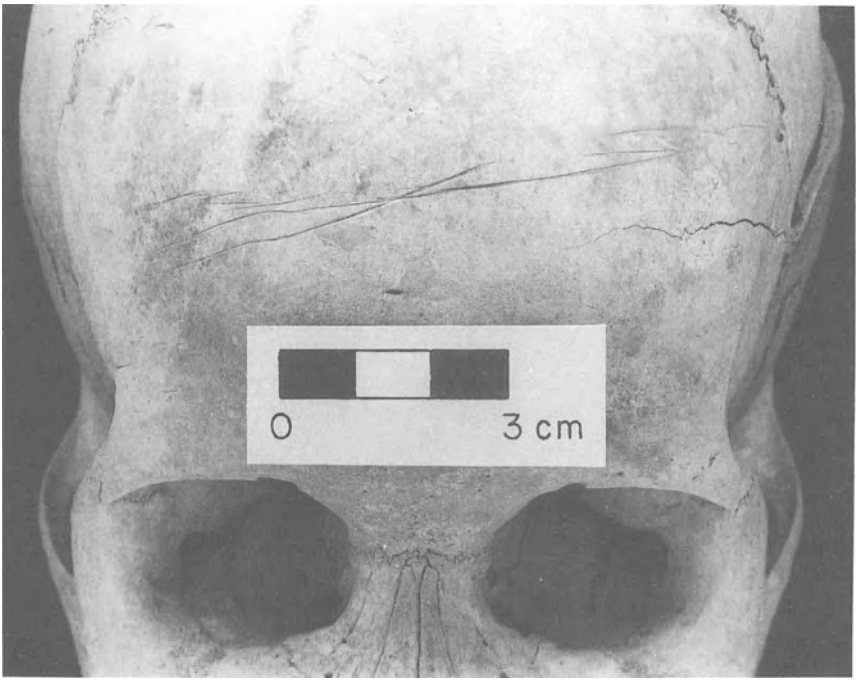

Figure 2. Multiple deep cut marks from scalping on a Norris Farms cranium (Skeleton 72).

lated at the time of burial, and carnivores had gnawed on virtually all of these skeletons. Multiple burials often consisted of bodies that must have been in a similar state of disintegration when interred, judging from the bones present and their disposition in the graves. These burials indicate that single-sex groups, probably work parties, were the targets of some attacks.

The wounds, postmortem scavenger damage, preinterment body decomposition, grave location, and the numbers of individuals buried in separate features indicate that numerous community members were killed in many different encounters with their enemies. Each incident resulted in only a few deaths, and the distribution of graves indicates that the attacks probably took place throughout much, or all, of the period of cemetery use. Some people must have died in isolated places, whereas others fell in often-visited spots, increasing the likelihood of rapid discovery and interment in the village burial ground.

Five people, all women, survived being attacked despite their grievous wounds. Three of them were scalped, and two had chert embedded in their bones (Figure 3). All of these injuries showed considerable bone remodeling, indicating that the wounds had healed. At least occasionally, the attackers did not finish off

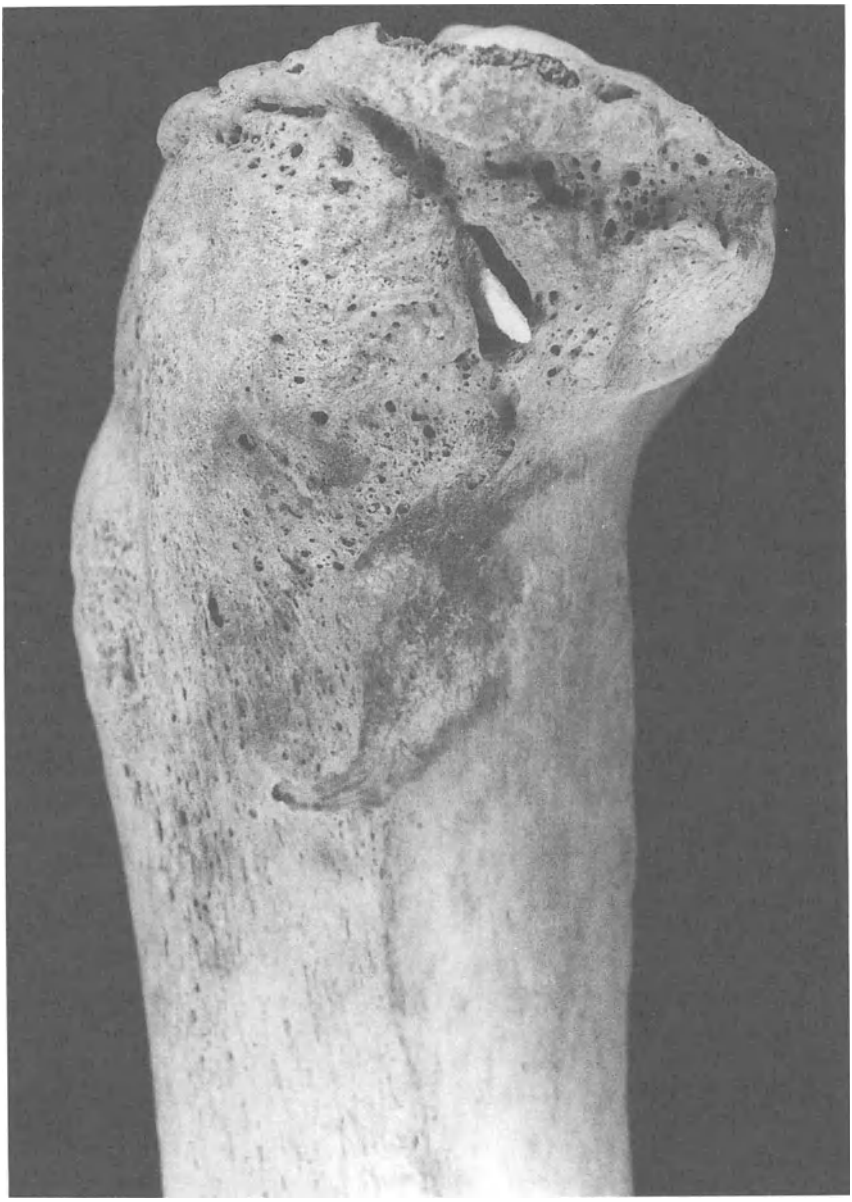

Figure 3. A healed injury of a Norris Farms left tibia with a projectile point still lodged in the bone (Skeleton 34).

their victims, and badly injured people somehow made it back to their village before dying from wounds or exposure.

The pattern of violence at Norris Farms is consistent with chronic intergroup warfare. A few of the skeletons may represent accidental deaths or a purposeful within-group elimination of antisocial deviants, but the sheer number of victims and the viciousness of the attacks indicate that most, or all, of these people died in encounters with their enemies. Conflicts can lead to community fissioning in small-scale societies, but no such village could have remained intact if tensions progressed to the point where factional fighting regularly caused so many deaths. Furthermore, the frequent mutilation of victims points to death from enemies who were intent on heaping scorn upon their fallen foes.

Norris Farms is not the only west-central Illinois cemetery containing skeletons of people who died violently. In fact, lethal fighting seems to have occurred regularly from Late Woodland times onward, as shown by skeletal remains from a number of sites (Charles, Leigh, and Albertson 1988; Conrad 1991; Heilmann, Neely, and Cook 1991; Morse 1978; Neumann 1940; Perino 1971, 1973a,b,c; Snyder 1908). The intensity of warfare in this region and elsewhere undoubtedly varied over space and time, depending on context-specific circumstances.

Existing archaeological data on the several hundred years bracketing Norris Farms are consistent with a continual jostling for advantageous positions by rival sociopolitical groups and a shifting of regional population distributions. Dynamic sociopolitical and demographic settings are indicated by an intrusion into the valley of a distinctive Oneota cultural tradition represented by Norris Farms and other sites, palisades surrounding villages, and defensible bluff-edge settlement locations (Conrad 1991; Esarey and Santure 1990; Harn 1978, 1980:82). Furthermore, Styles and King (1990) have suggested that an atypical, but small, subsistence assemblage from the village associated with Norris Farms reflects a reduction in resource procurement options in a high-risk social environment.

Hostilities flaring into outbreaks of lethal fighting between villages are common in a number of small-scale societies from the ethnographic present. Unresolved tensions can escalate and spawn a series of revenge killings during chance meetings and planned raids (Brookfield and Brown 1963:79; Chagnon 1983:170–189, 1988; Ferguson 1990b; Hallpike 1977:196–231; Heider 1970:99–133, 1979:99–112; Meggitt 1977; Morren 1984; Netting 1973, 1974).

The great likelihood of violent death for adult males at Norris Farms is matched by mortality figures for some recent conflict-prone, small-scale societies described by ethnographers (Chagnon 1972, 1974:160, 1983:79, 1988; Glasse 1968:98; Heider 1970:231, 1979:106; Meggitt 1977:110). The balanced sex ratio of the Norris Farms victims, however, is unusual. Warfare in these societies typically leads to many more deaths among men than women (Chagnon 1972, 1974:160, 1983:180, 1988; Divale and Harris 1976; Glasse 1968:98; Heider 1970:231, 1979:

106; Meggitt 1977:110–112). The factors leading to similar numbers of male and female violent deaths at Norris Farms are unknown. Abducted women might not have been valued as sources of additional labor because they could not be put to work in attackers' households without expanding critical subsistence activities beyond reasonably safe zones close to settlements (see Fried's [1967:119] comments on warfare's effect on community size). A risky social setting, presumably as threatening to attackers as it was to the Norris Farms villagers, would have aggravated food shortfalls in a region where resource productivity fluctuated markedly from one season to the next. Alternatively, raiders from distant places might have found it difficult to carry off troublesome captives who would slow their flight to safety. In historic times, great emphasis was placed on conducting raids without a loss of life to the attacking party.

Massacres

Excavations in the late 1970s at Crow Creek in South Dakota have yielded the best evidence to date for a large-scale massacre on the prehistoric Plains. No event of a similar magnitude has been documented archaeologically in the Eastern Woodlands. This fortified village along the Missouri River was attacked during the fourteenth century, and many of its inhabitants were killed, mutilated, and left exposed before being buried. Excellent descriptions of the Crow Creek excavations and skeletons are available in Willey (1990) and Willey and Emerson (1993).

The bones of almost 500 people were found commingled in the village's fortification ditch (Willey 1990:14, 61; Willey and Emerson 1993). These remains were primarily disarticulated, although bones in proper anatomical positions indicate that parts of bodies also were buried (Willey 1990:13–15). The settlement's original population is not known, but it is likely that a large fraction of the village inhabitants died during the attack.

Many bodies were mutilated (Willey 1990:106–152; Willey and Emerson 1993). In fact, the great majority of crania from men, women, and children show cut marks from scalping. Decapitation was also common, as indicated by cut first and second cervical vertebrae and occipital bones. Incisions on other skeletal elements indicate that some bodies were dismembered.

The bodies must have been left lying on the ground for some time following the attack before the remains were gathered for burial. Many bones were damaged by carnivores, and the illustrated specimens resemble those from Norris Farms (Willey 1990:126–131; Willey and Emerson 1993).

The victims included many adult males and females (Willey 1990:46–50; Willey and Emerson 1993). Juveniles were also present, although infants and young children were underrepresented in the bone deposit. The excavators noted that some youngsters could have been carried off by the raiders or their small,

fragile bones might not have survived the period between death and burial when bodies were exposed to the elements and scavengers (Willey 1990:17, 130; Willey and Emerson 1993).

The massacre occurred at a time of unusual vulnerability: the village's fortifications were apparently being replaced at the time of the attack (Willey 1990:5–6; Willey and Emerson 1993). The successful raiders took advantage of a particularly opportune moment in an atmosphere of uneasy social relations that included uncertain and shifting alliances among friends and foes alike. These are the circumstances under which massacres are likely to occur in ethnographic and historical accounts of such events.

The Crow Creek massacre was not an isolated incident. Healed injuries, including lesions from scalping, indicate that some people had survived attacks that took place long before the massacre (Willey 1990:113, 178; Willey and Emerson 1993). Therefore, the hostilities culminating in catastrophe were part of long-standing tensions that periodically broke out into outright violence. Furthermore, other late prehistoric Plains skeletons exhibit purposeful trauma (O'Shea and Bridges 1989; Sheridan, Mobley-Tanaka, Van Gerven, and Shields 1992), and excavations elsewhere have uncovered evidence of massacres (Wood 1976).

Indiscriminate killing during the Crow Creek massacre is consistent with similar events in other parts of the world where people of both sexes and all ages lose their lives in surprise attacks (see Heider [1970:118–121] for a dramatic account of a New Guinea massacre). In this respect, the Crow Creek findings resemble those of the only other osteological study of a major Plains massacre, an eighteenth-century Missouri River Arikara village that suffered a similarly devastating attack (Owsley, Berryman, and Bass 1977). Again, many juveniles and adults, both males and females, were killed, although children, especially infants, were underrepresented at the historic site.

WARFARE IN EASTERN NORTH AMERICA

Skeletal Evidence

The information about purposeful lethal trauma that can be obtained from skeletal collections is generally underappreciated. This situation stems from the geographically and temporally spotty nature of available data, imprecise specimen descriptions, incomplete reports on skeletal samples, and frequently obscure sources, such as long-forgotten papers and contract archaeology publications of limited distribution. Only rarely is evidence of skeletal trauma embedded in a broader cultural context that enriches archaeological assessments of past social relations.

Intergroup violence at Norris Farms and Crow Creek was part of a widespread phenomenon, not isolated examples of aberrant behavior in prehistory. It is not unusual to find references to conflict-related wounds in skeletons from Plains and, especially, Eastern Woodlands sites, at least for certain time periods. Skeletons showing such trauma date from Early Archaic through historic times: Early to Late Archaic (Charles, Buikstra, and Konigsberg 1986; Freeman 1966; Funkhouser and Webb 1937; Hruska 1967; Jefferies 1988; Lewis and Lewis 1961; Overstreet 1980; Pfeiffer 1977; Ritchie 1980; Shetrone 1925; Walthall 1980; Webb 1946, 1950; Webb and DeJarnette 1942; Webb and Haag 1940; Winters 1969); Early to Middle Woodland (Conner and Link 1991; Lewis and Kneberg 1957; Shetrone 1926; Tiffany et al. 1988); late prehistoric, including Late Woodland, Weeden Island, Mississippian, Fort Ancient, Oneota, Central Plains tradition, Initial Coalescent (Allman 1960; Berryman 1984; Black 1979; Boyd 1984; Charles et al. 1988; Cole and Deuel 1937; Conrad 1991; Hanson 1975; Heilmann et al. 1991; Hill 1981; Hooton 1920; Hoyme and Bass 1962; Lewis and Kneberg 1946; Lovejoy and Heiple 1970; Milanich, Cordell, Knight, Kohler, and Sigler-Lavelle 1984; Milner 1990; Milner and Smith 1990; Milner et al. 1991; Mills 1917; Molto, Spence, and Fox 1986; Morse 1978; Murphy 1968; Neumann 1940; Ortner and Putschar 1985; O'Shea and Bridges 1989; Owsley and Berryman 1975; Perino 1971, 1973a,b,c; Pollack, Powell, and Adkins 1987; Riggs 1985; Ritchie 1980; Ritzenthaler 1979; Sauer and Clark 1991; Sciulli, Pacheco, and Wymer 1988; Sheridan et al. 1992; Snyder 1908; Webb 1938; Webb and Wilder 1951; Wedel 1959; Willey 1990; Willey and Emerson 1993; Williamson 1978; Wyckoff 1981); and historic, including protohistoric (Blakely and Mathews 1990; Owsley et al. 1977; Witthoft, Kinsey III, and Holzinger 1959).[4] These examples include projectile points embedded in bones, massive wounds from blows to the head, and body mutilation, particularly scalping. While it is likely that the great majority of these people died during purposeful fighting with the inhabitants of other villages, all such violent deaths need not have been from warfare. Some individuals could have died accidentally,

[4]Ambiguous evidence, such as enigmatic Middle Woodland trophy skulls (Buikstra 1978; Owsley and Berryman 1975; Seeman 1988), is omitted from the list of source materials, although at least some detached crania in prehistoric contexts are probably the heads of enemies (Powell 1977). The list of citations on violence in prehistory is not intended to be exhaustive; it represents the initial stage in a study of prehistoric North American warfare. The citations underscore the numerous examples of lethal trauma from prehistoric contexts. The coarse cultural and temporal breakdown used here is largely a function of problems encountered when attempting to make some sense out of incompletely reported information, poorly described sites, blurry photographs of burial artifacts, equivocal cultural associations, and ambiguous nomenclature. Specimens other than those referred to by references in the text include skeletons associated with Late Archaic or Early Woodland (Wilson 1901) and Fourche Maline (Powell and Rogers 1980:20) associations that do not readily fall into the categories presented here, as well as skeletons from unknown time horizons (McAdams 1908; Mills 1900; Morse 1978; Ortner and Putschar 1985; Ritzenthaler 1979; Wilson 1901; Young 1910).

whereas others might have been killed because they could no longer be tolerated by fellow community members.

Warfare Practices

The particularistic orientation and incomplete nature of most archaeological reports on trauma severely limit what can be said about violence in prehistory. Combining information from sites widely distributed temporally and spatially throughout eastern North America, while disregarding specific cultural contexts, is far from an acceptable practice. Nevertheless, consideration of these data collectively is a first step toward identifying broad-scale patterns that serve as starting places for future research.

The skeletal evidence for violence is consistent with the Norris Farms hit-and-run pattern described previously. First, many more adults than juveniles died from intentional violence. Second, both men and women were killed. More male deaths are mentioned in reports on prehistoric sites: about four men for every woman (published references to over 80 skeletons, excluding the Norris Farms and Crow Creek remains). Although mostly males seem to have died violently, little weight can be attached to any particular sex ratio because of the heterogeneous nature of the sample and a bias toward males in many osteological studies. Weiss's (1973:58) observation that males are typically overrepresented in early skeletal reports is supported by the skeletal analyses of Milner and Jefferies (1987) and Powell (1988:89–90). Third, attacks tended to involve only a few victims at a time, either single individuals or small groups of people. Fourth, wound locations suggest that many people were ambushed. Fifth, commonplace tools, such as spears, arrows, and celts, were employed as weapons, making it difficult to spot implements of war. Sixth, victims often, but not always, were buried within village cemeteries. Seventh, people occasionally survived the attacks. Eighth, the mutilation of victims' bodies occurred often during the late prehistoric period. Ninth, the violence experienced by the Norris Farms community was unusually severe. Tenth, carnage similar to that which took place at Crow Creek was not nearly as common as small-scale attacks focusing on targets of opportunity and resulting in only several deaths apiece.

At Norris Farms, villagers often found it possible to obtain victims' remains for burial. The retrieval of skeletonized remains occurred elsewhere as well (O'Shea and Bridges 1989). Crow Creek illustrates what happened when numerically diminished and fearful massacre survivors were forced to bury hurriedly many fellow villagers. Finally, it might not have always been possible to return bodies, or bones, when deaths occurred far from principal settlements. Molto and coworkers (1986) have argued that an atypical and isolated group of burials were the remains of unsuccessful raiders who were killed and dismembered in enemy territory.

Temporal Patterns

The likelihood of violent death apparently changed over time in the eastern part of the continent, although it should be kept in mind that there are many problems with available data. Skeletal evidence for such deaths begins with Archaic hunter-gatherers. It seems that lethal interpersonal conflict became more common in some places during the last half of the first millennium A.D. among Late Woodland village horticulturalists. Warfare was an important feature of intergroup social relations from then onward, continuing into historic times.

The intensity of lethal fighting appears to have varied considerably among different Archaic peoples. For their time, the occupants of the shell and midden mounds located along the banks of major rivers in the Midsouth experienced a comparatively high risk of succumbing to violence. These great accumulations of occupational refuse, dating to about 5000 to 2000 B.C. (Smith 1989), indicate a narrowing of forager activities to particularly favorable resource-rich locales, the emergence of which Smith (1986, 1989) has linked to mid-Holocene changes in climatic conditions and river regimes. Gravitation toward such areas would have increased the likelihood of disputes between social groups, including violent conflicts fostered or aggravated by the claims of rivals to places where critical resources were superabundant, highly predictable, consistently available, and easily acquired, especially during bad years. While these settings were not the only ones where people died violently, they are the places where skeletons with lethal wounds are most often found.

Considering the nature of skeletal data, more work is necessary before this part of the Archaic is accepted as a time of increased hostilities, at least in certain locales, relative to earlier and later times. The combined osteological evidence, however, supports Walthall's (1980:64–65) suggestion, based on skeletons from a Tennessee River site, that prime areas in the vicinity of great heaps of debris were the objects of contention by these ancient hunter-gatherers.

Over time, an intensified emphasis on a suite of seed-producing plants, ultimately marked by a second-millennium B.C. domestication of several species (Smith 1989), would have evened out marked discrepancies in resource productivity along major river valleys. Greater equability, perhaps also a response to climatic change (Jefferies 1988), would have reduced the allure of previously preeminent places marked by impressive middens. Resource-rich hot spots that were once the subjects of so much attention were no longer places where existing antagonisms were likely to erupt into outright fighting. By reducing disparities between good and bad places, an increased reliance on these hardy and prolific seed-producing plants made movement an attractive option to open conflict in tense social settings, even during lean years. Thus, a shift in subsistence strategies, which eventually led to "food-producing economies" of the Middle Woodland period 2,000 years ago (Smith 1989:1569), created opportunities lessening the

likelihood of conflicts causing a loss of life. Other cultural changes, including new forms of social organization and intergroup relations during the Middle Woodland florescence, also might have played a part in dampening tensions that could otherwise escalate into cycles of vengeance killings. Unfortunately for the inhabitants of the East, this pacific state of affairs, assuming it actually occurred, did not last for many hundreds of years.

It is easier to link Late Woodland and later factional violence to known cultural and demographic changes. Generally speaking, late prehistoric times spanned a period of population increase; more sedentary existence; greater focus on areally restricted, spatially fixed fields used to grow greatly valued, easily stored, and high-yielding plants; and the widespread development of more complex forms of sociopolitical organization (Smith 1986). The last include tribal confederacies and the ranked sociopolitical systems commonly called chiefdoms. All such processes undoubtedly are closely linked.

The skeletal evidence is consistent with the frequent occurrence of palisades, sometimes coupled with earthen embankments and ditches, during late prehistoric and early historic times (DePratter 1991:34–56; Lafferty 1973). Defensive constructions serving as screens against surprise attacks were a response to the increasingly volatile nature of social relations, including threats from hostile neighbors. Stated simply, people go to the great effort of building palisades only when they must do so to protect themselves.

During late prehistory, when more people were living in eastern North America than in earlier times, the work of erecting fortifications would have become more attractive as the likelihood of finding highly productive areas decreased. Prime areas elsewhere were occupied or claimed by other social groups, or they were part of unoccupied buffer areas separating rival sociopolitical formations. The work involved in field preparation, tending crops, and other labor-intensive chores would have been a powerful inducement to stay in place and to make the best of a bad situation through defensive measures, including the forging of alliances among similarly constituted social groups. Earlier in time when there were generally fewer people, movement might have been a viable, even preferred, option for hard-pressed people seeking to alleviate untenable social situations.

This era of heightened tensions was also a time when the mutilation of slain enemies became a common feature of combat. These practices were designed to show disdain toward enemies, to enhance the prestige of successful warriors, and to threaten others with military prowess. Thus an additional level of one-upmanship became a significant part of the posturing and killing among antagonists. Such behavior is depicted on Mississippian works of art, which include images of weapons and severed heads gripped in warriors' hands (Brown 1976, 1985). A prominent feature of this artwork, Brown's (1976:22, 1985:113) "falcon-impersonator," underscores the importance of ferocity and boldness to Mississip-

pian peoples, especially high-ranking members of these chiefdoms. Certainly in historic times, successes in war brought about increases in social standing (Hudson 1976:325–327; Rountree 1989:101).

Osteological data clearly indicate that attacks on targets of opportunity involving only a few participants were a reasonably common occurrence in Mississippian societies. Thus small-scale fights, such as ambushes of the unwary, continued to take place between southeastern chiefdoms. DePratter (1991:38–56) has gone further by arguing that these societies also were engaged in warfare involving large formations of well-organized combatants whose fighting was directed by war leaders (also see Dye 1990). The sixteenth-century Spaniards seem to have encountered highly regarded men entrusted with matters of war by their chiefs (Varner and Varner 1951:277–278). The skeletal evidence, however, provides no information on the nature of large-scale engagements—that is, whether they were wild melees or DePratter's (1991:39–56) more organized fighting.

Europeans during the early historic period clearly described intergroup enmities that could progress to open warfare between rival social groups jockeying for power (DePratter 1991:39–56). The new arrivals to the continent proved to be adroit at exploiting deep-seated Native American antagonisms for their own political and economic purposes. Warfare escalated, and these conflicts were among the many disruptive factors that contributed to the rapid disintegration and displacement of Native American societies.

An Osteological Perspective

Available mortuary data, although deficient in quality, quantity, distribution, and representativeness, are not consistent with the positions of scholars such as Jennings (1975:151–153, 159, 169) who argue that casualties from precontact intergroup conflict were inconsequential and women were spared. Deaths in small-scale engagements, particularly ambushes, were by no means uncommon, especially in late prehistoric times. Uneasy relations among antagonists were occasionally punctuated by indiscriminate mass killings during sudden catastrophic attacks, especially when groups showed signs of weakness. Warfare had a demonstrable impact on the survival potential of individual communities, and some groups were utterly devastated by such conflicts. Nevertheless, there are simply not enough skeletons with combat-related injuries to accept a Hobbesian view of continuous, unrestrained war across the entire Eastern Woodlands.

In contrast, the osteological evidence is compatible with the portrayal of warfare between small-scale societies that is presented in much of the ethnographic literature. The skeletal remains, along with other archaeological evidence such as palisades, show that unresolved tensions occasionally flared into outright violence among the pre-Columbian peoples of the Plains and Eastern

Woodlands. At times these hostilities resulted in significant mortality. Conflict must have been precipitated by context-specific events, similar to the situation in ethnographically known societies, and the intensity of warfare undoubtedly varied from one place to another. Generally speaking, however, serious conflicts leading to a loss of life became more common in the late prehistoric period as overall population increased and options for flight to favorable locations correspondingly decreased.

Tensions that erupt into violence are a destabilizing element in atomized social landscapes characterized by essentially autonomous and self-sufficient sociopolitical formations (Brookfield and Brown 1963:77–81, 141, 143–144; Chagnon 1972, 1983, 1988; Ferguson 1990b; Glasse 1968:87–109; Hallpike 1977:196–231; Heider 1970:99–133, 311, 1979:88–112; Meggitt 1977; Morren 1984; Netting 1973, 1974). Such conflicts promote the fragmentation of both individual communities and larger multicommunity groups. Uncertain intergroup relations coupled with the threat of violence serve as powerful incentives to form alliances that dampen tensions and augment the means of effective retaliation. People can be forced to abandon previously occupied areas in favor of safer environs, and hardship can follow forced movement, the destruction of foodstuffs, and restrictions on resource-procurement options. Therefore, it is not surprising that warfare figures prominently in recent archaeological research emphasizing the delineation of volatile sociopolitical settings and varied regional occupational histories in the Eastern Woodlands (Anderson 1990, 1994; DePratter 1991; Milner et al. 1991).

For osteologists, there remains the problem of recognizing purposeful intergroup conflict in prehistory. The chance of finding an unambiguous indication of warfare—a massacre of many people—is remote. These incidents occurred infrequently, and the remains must have been deposited in a way favoring bone preservation, typically through intentional burial. The most common skeletal evidence of warfare would come from the occasional deaths that took place during opportunistic ambushes or organized raids. Unfortunately, such behavior is more difficult to identify than massacres because it leaves an equivocal archaeological signature. Reliably differentiating combat fatalities from other traumatic deaths requires the use of multiple kinds of evidence, including the overall proportion of such deaths in a cemetery sample, the number of fatalities in separate incidents, the nature of perimortem damage to skeletons, and a consideration of the archaeological context. The existence of any such evidence, however, demands close attention because problems with recognizing violent deaths ensure that lethal trauma will be underestimated, even in the best of circumstances. Despite the difficulties in discerning antagonistic behavior in prehistory, the consequences of more-or-less continuous sniping at enemies should not be dismissed lightly, as they have been by some scholars.

CONCLUSION

Prehistoric skeletons from the Plains and Eastern Woodlands illustrate the information that only mortuary sites can provide on intergroup relations, in this instance outright fighting. For Norris Farms, the threat of surprise attacks and the steady attrition of community members were important parts of everyday life. For the Crow Creek villagers, weakness spelled disaster. Many of them were killed suddenly when they were unprepared for an attack, and the catastrophe punctuated a generally hostile atmosphere that included small-scale attacks at other times.

Much more attention should be directed toward how prehistoric warfare was conducted, its severity, its temporal and geographic variation, its consequences, and its relationship to other measurable aspects of past social and ecological settings. Nevertheless, the osteological evidence, spotty and incomplete as it is, indicates that pre-Columbian warfare varied in intensity over time and space, and that casualties became more common during the late prehistoric period. These remains demonstrate that high-mortality warfare can occur among villagers in the absence of disruptive influences stemming directly or indirectly from contact with larger and more technologically sophisticated exploitative foreign powers, including those of the modern era. The prehistoric picture is fully compatible with depictions of warfare in conflict-prone small-scale societies of the ethnographic present.

Acknowledgments

Access to the Norris Farms skeletons was granted by Michael D. Wiant of the Illinois State Museum. Virginia G. Smith assisted with the examination of skeletons; C. Wesley Cowan, Richard W. Jefferies, Robert F. Sasso, and Mark F. Seeman provided references and helped identify the cultural affiliation of questionable mortuary sites; and David G. Anderson, Claire McHale Milner, Bruce D. Smith, and David Webster made excellent suggestions that improved this chapter.

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Part V

Concluding Remarks

Chapter 11

Regional Perspectives on Mortuary Analysis

CLARK SPENCER LARSEN

TRIALS, ERRORS, AND EXPLORATIONS IN MORTUARY ARCHAEOLOGY

Stimulated by the American Anthropological Association's Social Dimensions of Mortuary Practices symposium organized by James Brown in 1966 and its follow-up publication (Brown 1971), archaeologists embarked on field programs and other investigations worldwide that addressed a range of issues dealing with the social and biocultural meaning of treatment of deceased. Far from establishing a simple set of rules that govern burial of the dead in human societies, these investigations revealed that by virtually any measure—body treatment, orientation, artifact accompaniments, demographic composition, temporal and cultural association, and social complexity—mortuary behavior is highly variable. The contributors to this book tackle some of this variability and by doing so demonstrate the continued growth in our comprehension of human behavior as it is represented in the archaeological record of mortuary activity. The study of mortuary behavior in past societies has become recognized as an important—if not indispensable—avenue for documenting and understanding social behavior and organization.

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This work is built on important capstones in archaeological mortuary studies, including Arthur Saxe's (1970) influential investigation arguing that formal disposal areas for the deceased were emblematic of both ideological and economic factors and Lewis Binford's (1971) inciteful discussion of social persona and mortuary practices. Since then, publication of other key works in mortuary archaeology, notably *The Archaeology of Death* (Chapman, Kinnes, and Randsborg 1981), has advanced our understanding of behavior surrounding death and provided the context for later studies, including some of those in the present volume.

Regional approaches in archaeology have focused largely on settlement and population distribution. However, the investigations presented in this volume make it clear that mortuary analysis is conducive to a regional framework of study, especially given the range of variation in style, size, content, and other important attributes of death assemblages (and see discussion in O'Shea 1984).

Through his experience with the mortuary archaeology of Bronze Age England, Richard Bradley captures the essence of the development of mortuary studies over the last decade or so. That is, models of behavior have been proposed and refined, and a new appreciation for the complexities of mortuary activity has emerged. His earlier comparison of mortuary localities (Bradley 1981) documented an apparent decline in complexity of Bronze Age funerary practices from large mounds with complex grave goods—especially elaborate metalworks—to cremations enclosed in simple, domestic pots. This trend was naively interpreted to reflect a social collapse during the Late Bronze Age.

Additional archaeology and reinterpretation by him revealed that such a model of social collapse in Bronze Age Britain was based on very limited knowledge of mortuary behavior. In particular, examination of long-existing museum collections coupled with additional fieldwork indicates that a significant segment of the later period's mortuary record could be found in rivers; that is, large numbers of metal artifacts and hundreds of human crania dating to the Late Bronze Age were found in the Thames. High-status settlement sites yielded disarticulated remains that instead of reflecting a casual treatment of deceased may, in fact, represent a segment of complex ritual behavior. Moreover, it appears that Late Bronze Age bodies had been prepared for burial in the domestic setting, and the crania and some metalworks had been interred elsewhere. The important point of this, and of this volume, is the necessity of using a broader regional emphasis in mortuary analysis than had been relied upon before. It reminds us that social behavior is complex and we should not expect to see a simple, straightforward archaeological record revealed within individual mortuary sites.

Brown's retrospective essay (Chapter 1) highlights some of the limitations of identifying the social significance of mortuary remains in archaeological settings. Especially problematical is the identification of ritual and social organization relationships in the mortuary record. However, despite some shortcomings, this

line of archaeological inquiry has been highly productive. The use of ethnological and historical data in the analysis of mortuary behavior is especially important in that the evidence gives solid grounding for phenomena that are simply not available based on archaeological data alone. On the one hand, mortuary practices are a cultural universal of humankind; as such, they defy easy description or generalization. On the other hand, a broader basis for interpreting and explaining the social significance of material remains from mortuary sites is realized by viewing them as part of a strategy pursued by the living—the survivors of the deceased—in solving social problems.

Brown notes that analysis of individual interments has been heavily emphasized in archaeology. Work on collective burial by Bloch on the Merina of Madagascar has proven informative. Here, the commingling of the skeletal remains of the deceased reflect the social collectivity of the living. This is an important point raised time and again in mortuary analysis: the deceased are a fossilized image of the living society from which they were drawn. In this regard, Brown emphasizes that cross-cultural studies are a resource in anthropological interpretation that serve to establish generalizations for linking mortuary site construction—what is seen in the archaeological record—with the behavior that created it.

What, then, are the factors that enter into creating that record? Since the 1970s, a number of interpretations have emerged. Central to many of these discussions are the economic and social conditions. Brown suggests that the pattern of regularities observed in the archaeological record indicates that a small number of factors are the paramount influences in determining the forms of burial treatment.

What are some generalizations and assumptions that have been discussed most frequently by mortuary archaeologists? Perhaps the most cited assumption is that members of a society treated differentially during life will be treated the same in death (see Goldstein 1980; Peebles 1971; Saxe 1970; Thomas and Larsen 1979; and many others). On this point, Brown notes that in ranked societies the difference between high- and low-status burial is probably related to the relative expense or energy expenditure involved in the treatment of the deceased. However, this becomes confusing when analyzing archaeological mortuary data where some social distinctions might disappear due to selective preservation, thus conflating a complex picture into one that is deceivingly simple.

Similarly, does an elaborate child burial with lots of material wealth indicate ascribed (inherited) status, and, conversely, does a child burial with little or no material wealth indicate the presence of achieved status? Since the publication of the compelling article by Peebles and Kus (1977) on the archaeological correlates of chiefdoms, many an archaeologist has naively interpreted wealth with juvenile burials as representing proof for the presence of complex social ordering. Brown makes the important observation that although this premise makes a great deal of

intuitive sense, it has not been subjected to rigorous testing, especially in regard to data drawn from cross-cultural or historical sources. This point, of course, underscores the need to identify factors and conditions that determine mortuary behavior. Unfortunately, as Brown correctly points out, the historical and ethnological records do not always provide easy solutions.

Primarily economic models of mortuary interpretation have played an important role in North American studies. In particular, Brown makes reference to Saxe's now-familiar Hypothesis 8, namely, that when human societies engage in control of restricted resources (e.g., arable land), they are likely to maintain formal disposal areas for deceased individuals. This hypothesis has been further elaborated by Goldstein (1980) and by Charles and Buikstra (1983) in the lower Illinois River valley (see also Brandt 1988; Charles 1992, Chapter 4, this volume; Chapman 1981, Chapter 2, this volume; Mires 1991). These studies point to the primacy of economic and social factors in interpreting mortuary behavior.

Like most archaeological data sets, representativeness is a critical factor that requires careful consideration when interpreting the mortuary record. The mortuary remains studied by the archaeologist are only a part of the record—oftentimes limited in ways that are poorly understood. The upshot of this is that the data base can be artificial. For example, Brown notes that the empty crypts in Havana Hopewell mounds in Illinois give a less than adequate basis for social and behavioral inference.

Brown observes that many discussions of mortuary behavior have emphasized particularistic analysis of individual burials without consideration of important underlying assumptions. With the introduction of the Saxe and Binford research program, however, there has been an important shift to examination of variability on a regional level. This can only serve to broaden our understanding of past societies.

MEGALITHIC MONUMENTS AND TOMBS: TERRITORIALITY, RESOURCE CONTROL, AND LABOR ORGANIZATION

Chapman (Chapter 2) presents a cogent discussion of progress in mortuary archaeology, especially since the publication of his initial study on European megalithic monuments more than a decade ago (Chapman 1981). He reassesses the territorial model first proposed by Renfrew (1976) that the highly visible megalithic tombs in western Europe functioned as symbols of territoriality among early agricultural societies. He notes up front that the regional perspective for mortuary archaeology is especially appropriate for study of prehistoric complex societies because individual participants represent a range of social groups and localities from both the immediate vicinity of mortuary activity as well as the regional polity.

Chapman, however, has taken this position a step further by arguing that the model should be more broadly defined to include additional resources besides agricultural lands. Work by other archaeologists supports the territorial model of mortuary activity and megalithic tomb construction in other areas of western Europe. Citing Cooney's (1983) research on tombs in the province of South Leitrim, Ireland, Chapman notes the correlation between monument location and the best agricultural land. In eastern Jutland, Denmark, Madsen (1982) has found that Early Neolithic tombs are located along main watercourses with damp soils for livestock grazing. Clearly, then, the placement of cemeteries and mortuary architecture is not a random occurrence, but likely related to resource territories.

A difficulty raised in interpreting megalithic locational data is the actual representativeness of the tombs themselves. Renfrew's original work—on the islands of Arran and Rousay—was based on the premise that tomb destruction was quite minimal. Thus, he felt that the mortuary activity and settlement distribution could be precisely characterized. His research spawned other investigations. Unfortunately, outside of Renfrew's immediate study area it now appears that the mortuary record has been severely diminished, especially during the period of field clearing for intensive agriculture in medieval times and after. Therefore, it is essential that extreme caution be used in drawing inferences about mortuary behavior based on megalithic monuments.

Unlike earlier interpretations of megalithic tombs, the more recent analyses have facilitated the interpretation of human behavior and territoriality in western Europe. The new appraisal of the territorial model shows that arable land is only one critical resource, that megaliths first arose as humans were attempting to access nature via food production. Although these tombs were used by specific groups, they were not the centers of defended territories. Finally, Chapman points out that megalithic tombs were far more than mortuary localities—they served as potential sources of communication as well as points of labor appropriation for a variety of purposes.

Trinkaus (Chapter 3) notes that mortuary analyses were originally movitated by racial affiliation and population history as well as chronology construction. Although the field of study has progressed, she suggests that mortuary data are somewhat limited in that they may provide misleading indications of social differentiation and should not be depended upon as an exclusive source for documenting earlier social structures. Again, like the other contributors to this volume, the real progress to be made is by viewing mortuary behavior in the much larger, and more important, context of social behavior generally.

Trinkaus's study pertains to Late Neolithic western France from the period of 5500 to 2000 B.C. This is a critical period involving formation of social stratification. The populations during this time were heavily dependent on domestic animals coupled with nonintensive agriculture. These populations also were involved in exchange of raw materials for the manufacture of axes (from meta-

morphic rock) and flint blades. The region is dotted with megalithic monuments, especially on the Brittany peninsula to the Bordeaux region.

The mortuary program in this region is highly variable, involving large communal or elaborate individual funerary deposits. There are possible status markers, such as decorated ceramic objects. There is some evidence for a shift from egalitarian society to social inequality by the mid-Bronze Age. However, Trinkaus observes that there is little solid archaeological evidence in these mortuary sites for social ranking.

As pointed out by Chapman, the presence of megalithic structures indicates that a great deal of energy expenditure was invested in their construction, which almost certainly required a high degree of coordination of a labor pool and artisan skills. Because of the limitations of the mortuary record, inferences about social ranking and labor organization—which are highly interrelated—call for the investigation of other data sets. Trinkaus analyzes the lithic production and distribution in western France, especially with regard to centralized control.

Three key archaeological sites are examined, including Semussac, Biard, and Fort des Anglais. Examination of the lithic artifacts from these sites reveals that there was an extensive exploitation of specific workshop sites throughout the time framework of the study. Tool production became increasingly specialized, and though exchange of resources across areas was obviously present, most materials for tool production were locally available. Importantly, trade of flint for blade production was quite minimal. Thus, control of labor and acquisition of raw materials are not readily apparent in this record, indicating that social differentiation is difficult to track in Neolithic sites, both mortuary and nonmortuary.

CEMETERIES AND EFFIGY MOUNDS: TERRITORIES AND RESOURCE MAPS

The distribution of cemeteries in a temporal–spatial framework provides an important symbol of community definition, especially in consideration of society, technology, and economy in past societies. Charles (Chapter 4) provides in narrative format a succinct prehistory of mortuary practices and socioeconomic transitions in an area of the United States that has received extensive archaeological attention, the region at the confluence of the Illinois and Mississippi rivers. In large part, the degree of archaeological attention to this very rich mortuary record is due to the intensive human occupation of a highly productive and environmentally diverse area over a span of 8,000 years from the Early Archaic period to the late prehistoric Mississippian period.

The mortuary record first becomes visible in the Early Archaic period, with placement of deceased in midden deposits. In the Middle Archaic, the region sees the appearance of cemeteries, such as those located on margins of bluffs overlook-

ing floodplains. These are interpreted to reflect the emergence of resource territories with specific corporate group identities. During the Late Archaic period, there is an increase in sedentism, and community groups continue to use bluff-top cemeteries. Charles argues that this development marks a continuation of territoriality and symbolic reference to ancestral claims within the confines of specific drainage systems. By the close of the Archaic period, the mortuary ritual appears to have increased in complexity that involved opening and closing of specific burial localities.

In the following Early Woodland period, the preference for bluff-edge burial all but disappears. The only known cemetery is located on a river. The following period—the Middle Woodland, known regionally as Hopewell—involves the construction of burial mounds in valleys as population shifts to valley floors. The burial treatment is very elaborate in some instances, and is characterized by multiple burial tracks (e.g., Gibson–Klunk mound group).

In the Late Woodland period, Charles notes a unambiguous shift in the mortuary program that coincides with an increase in population density; that is, there is an increase in mound density and burials per individual mound site. Finally, during the Mississippian period, burial and social structure become highly stratified with interment involving both mound and cemetery burial. Among the best-known and most conspicuous ritual nuclei is the gargantuan Cahokia complex in the American Bottom. Especially at nonelite localities, there is an appearance of large floodplain cemeteries. Charles suggests that the reemergence of cemeteries during the Mississippian period denotes the reconfiguration of human–land relations whereby there is a shift to intensive food production (maize agriculture) on floodplains. Thus, corporate identity shifts to the region of greatest economic importance.

Charles's study accentuates the significance of location of cemeteries within the context of economic frameworks and socioeconomic transitions in the past.

In her contribution, Goldstein (Chapter 5) presents a much needed study of the enigmatic effigy mounds of the midwestern U.S., especially in southeastern Wisconsin. Although known for centuries, the limited bibliography of study of these sites would suggest that very little is known about them, particularly as they relate to mortuary behavior. The need for more systematic study and the use of behavioral models was indicated earlier by Clark Mallam (1976:73), who noted that "data collection has been random, and such data are not readily interpretable. Without cultural models, continued random excavation of mound complexes and habitation sites will tend only to promote confusion about Effigy Mound(s)."

Study of these mounds appears to be confounded by the presence of few burials and few artifacts in them. However, based on a review of the archaeological literature, analysis of mound forms, and examination of data from a stratified survey of sites, Goldstein shows that these mounds express a great deal of variety in their construction and contents. However, she reports that there also are a

number of common characteristics. In this regard, the mounds were constructed between about A.D. 650 and 1200 by hunter-gatherer populations who may have practiced very limited cultivation. The mounds take various animal forms, representing birds, panthers, lizards, bears, turtles, and others. Some of the mounds are noneffigy constructions, including conical, oval, and linear shapes. The mound groups lack clear patterning; however, individual mounds within groups often contain one or more features, such as a fireplace or stone "altar." There are few burials in the mounds, and when they are present, they are located at the center or heart or head region. Demographic composition of human remains is difficult to assess, but they appear to include all ages and both sexes.

Formal archaeological interpretation of effigy mounds has been minimal. However, in his important monograph, Mallam (1976) argued that effigy mounds are linked to specific territories associated with loosely related families who seasonally aggregated into larger corporate groups. These mounds functioned not for burial purposes, but rather served as metaphorical symbols of interaction between humans and nature. Goldstein's analysis indicates that the interments are largely secondary deposits of disarticulated remains that suggests that human remains were carried to the site from elsewhere. Thus, body treatment is consistent with Mallam's model of population aggregation.

Goldstein observes that the mounds are located primarily in wetland settings. This locational pattern suggests that the effigy mounds may have served as symbolic maps identifying resources and resource ownership. Interestingly, bird effigies are common in the westernmost mounds of southeastern Wisconsin, which may coincide with the major bird migration route the Great Mississippi Flyway. These and other associations strongly suggest some mapping function of seasonally available primary resources.

SOCIAL, POLITICAL, AND ETHNIC IDENTITY: THE MAROS GROUP, ANGLO-SAXON POLITIES, AND THE COPENA COMPLEX

O'Shea (Chapter 6) has recently focused on mortuary archaeology of seven Maros Group Early and Middle Bronze Age (2500–1700 B.C.) cemeteries in southeastern Hungary and adjacent areas of Yugoslavia and Romania. His analysis of the mortuary program indicates that burials were largely single, primary interments within a community or multicommunity cemetery. For the most part, all ages and both sexes are included in these cemeteries. However, there is an underrepresenation of young juveniles (less than 4 years) and young adult males (20–30 years). Some of the former were ritually buried in settlement (floors and middens) contexts. Adult male deaths likely occurred away from the settlement.

Other archaeological evidence suggests that these deaths were due to warfare, thus resulting in burial elsewhere.

O'Shea's formal analysis of the burial program indicates that interment followed strict guidelines. Males are buried on their left sides with their heads to the north; conversely, females are buried on their right sides with their heads to the south. Artifact inclusions were present with most interments. Given the ubiquity of funerary offerings and the large size of the cemeteries, a great deal of socially significant information on the mortuary program is available for this region of eastern Europe. O'Shea's analysis indicates that grave inclusions follow social and political lines. For example, males are buried with daggers and axes, whereas females are buried with bone needles and beaded sashes. Body treatments, such as trepanation and mutilation of hands and feet, are also present. Unfortunately, because most human remains were reburied in the 1930s and 1940s, it is impossible to give further study to the osteological samples. As O'Shea notes, this evinces the importance of human remains in understanding the range of complex behaviors present in mortuary settings (also see below).

In examining the many patterns of variability in the Maros Group data, one is especially struck by the uniformity and broad consistency of social markers in these sites. For example, males possess three social markers—daggers, axes, and head ornaments; females also possess three markers—sashes, bone needles, and head ornaments. O'Shea indicates that the variability points to important social distinctions. For example, head ornaments appear to represent very different social contexts for men and women—at the Mokrin cemetery, males show an east–west segregation of two ornament types, whereas females show no spatial arrangement. This is meaningful because it points to gender variation in the use of the same symbol.

Diachronic patterns also give important perspective on mortuary behavior in the past. For example, there is a marked decrease in the use of nonceramic artifacts in comparing early and late Maros burials. At the same time, however, there is continued reliance on major social markers. Thus, mortuary statuses continue be represented late in the Bronze Age. O'Shea postulates that differences he documents in the mortuary program result from changes in technology and trade organization and not from modifications in social organization.

The importance of this study is that it illustrates the dynamic nature of mortuary behavior and how various factors come into play in determining the makeup of funerary behavior. Moreover, it illustrates the complexity of factors that eventually result in the archaeological record. O'Shea concludes that the mortuary record must be viewed from the perspective of multiple sites and multiple archaeological contexts.

Fisher (Chapter 7) examines the mortuary record for one ethnic group—the Angles—from early Anglo-Saxon England (A.D. 450–650) in order to identify

social and political identity. The period following the collapse of the Roman Empire and its control of England saw a rapid shift from centralized state control to the appearance of many small, competing polities by the late fifth century A.D. Fisher analyzes burials from 10 cemeteries that represent two of these polities, Lindsey and East Anglia. Two distinct archaeological data sets within individual cemeteries are considered, including women's brooch styles and mortuary treatment of deceased. These data sets provide potential information on group membership and identity.

The analysis reveals important patterns of brooch styles. Regional variation between polities is limited. However, two (of eight) brooch styles show distinctive regional distributions, with Lindsey and East Anglia having strong preferences for single annular brooches and small-long brooches, respectively. Analysis of the number of brooch types per individual interment reveals a great deal of variation: there are 27 different groupings of brooch styles. Fisher suggests that the haphazard nature of brooch grouping indicates that early Anglo-Saxon women maintained a high degree of freedom of individual identity that was independent of social or political identity.

Analysis of number of individuals per burial (single vs. multiple), head orientation (west vs. other), body position (flexed vs. extended), and structural treatment (coffin, chamber, plant material, stone packing, simple placement without structural treatment) reveals clear differences between the Lindsey and East Anglia polities. All four units of analysis show regional distinctions: multiple interment was more popular in Lindsey, whereas western head orientation, structural treatment, and extended inhumation were more popular in East Anglia. Thus, unlike patterning in brooch styles, corpse treatment reflects social and political boundaries.

In sum, this regional study nicely demonstrates the importance of the mortuary record in elucidating identity at different levels, including the individual and the social and political group. Importantly, this study suggests that although both are part of the mortuary ritual, women's brooches and mortuary treatment refer to different aspects of social and political behavior.

In a similar vein, Beck (Chapter 8) approaches mortuary analysis from the perspective of identifying ethnic boundaries. The southeastern United States has been the focus of a great deal of study of mortuary ritual and its archaeological signature. Paradoxically, although the Middle Woodland Copena Complex is known exclusively from its mortuary sites, very limited formal analysis of mortuary behavior has been attempted until now.

Based on the study of 51 mounds from 27 archaeological sites located along the Tennessee River and its tributaries in northern Alabama and adjacent Mississippi and Tennessee, Beck observes that the Copena burial program is simple. Burials are located in submound and mound fill contexts, and all are primary interments. Material associations are scarce, but when present, they are limited to

copper and shell beads, bracelets and gorgets, galena nodules, or greenstone spades and celts. Rarely is more than one artifact associated with a burial.

Despite the simplicity of the mortuary program in Copena, Beck is able to document a series of interesting nonrandom patterns that have behavioral significance. Notably, statistical comparison of the western and eastern ranges reveals that there are far fewer graves in the west than in the east; the eastern graves tend to include more individuals than the western graves; western graves contain more elaborate artifacts and a greater abundance of materials than the eastern graves; young juveniles in the western graves tend to be more elaborately prepared than in eastern graves; and, there is a higher frequency of work-related artifacts (i.e., greenstone celts and spades) in the east than in the west.

Earlier workers suggested that the disparity between eastern and western Copena is temporal. However, Beck indicates that the straightforward differences between the two ranges of Copena material culture, burial density, and age composition argue against a temporal model. Rather, the differences appear to represent spatial variability between east and west. Beck speculates that the western population may represent the Copena elite, with evidence of structural inequality. In contrast, the eastern Copena sites may reflect a relatively egalitarian system. She also speculates that the western Copena adults were able to procure ritual objects and durable goods for burial purposes, certainly above that accomplished by eastern Copena adults. Overall, these findings are interpreted to represent the presence of at least one ethnic boundary within this cultural complex. Nonetheless, the general similarity of the mortuary program that encompasses both the eastern and western ranges of Copena indicates a broad participation in the same burial cult by both groups.

BIOCULTURAL AND SOCIAL STRUCTURING: RESIDENCE, COMMUNITY BURIAL, AND MORE ON BOUNDARIES

The wealth of information on midwestern U.S. mortuary archaeology and social organization is again emphasized by Konigsberg and Buikstra (Chapter 9) in their important study of human remains from the Illinois River and nearby central Mississippi River valleys. An extraordinarily rich human biological data base is drawn from 10 archaeological sites dating to the Middle Woodland (Hopewell), Late Woodland, and Mississippian periods. The authors address the general question: To what degree do the apparent cultural differences represent kin relationships?

In a sophisticated series of analyses of nonmetric cranial traits, they tackle three areas of long-standing interest in the region, including postmarital residence, within-site mortuary behavior, and ethnic boundary identification. Based on

models derived from population genetics and the use of multivariate generalization of univariate variance, they present evidence for greater female migration in the Middle and Late Woodland periods and greater male migration in the Mississippian period. Konigsberg and Buikstra suggest that this represents a shift from patrilocality to matrilocality as agriculture intensifies in later prehistory.

For assessing small-scale differences within groups, the authors examine four Middle Woodland burial mounds and one Late Woodland burial mound from the Pete Klunk mound group. Independent ceramic and mound conformation analysis reveals a temporal succession of the five mounds. Results of autoregression statistical analysis are consistent with a model of temporally successive use by a series of communities over time rather than simultaneous use of more than one mound by a single community.

An innovative population distance model used for identifying discontinuities in biological variables—in this case, cranial nonmetric traits—is applied to the Illinois skeletal series. Hypothetically, such discontinuities represent boundaries that limit movement of populations and material culture. Analysis of eight traits from 14 sites in the region revealed that the northernmost site (Ray) is separate from the other sites, and two sites (Yokem and Elizabeth) may be in a boundary zone dividing a northern from a southern series. These findings fit closely with other data. For example, material culture and site organization at the Ray site, located in the central Illinois River valley, are distinctive from all other sites in the sample. Moreover, the Elizabeth site lies between the lower and central Illinois River valley and shares attributes with both regions. Thus, this analysis squarely places the human biological signature of population groupings within a behavioral realm that has previously been identified by more traditional archaeological means.

This study affirms the value of human skeletal remains for assessing patterns of past human behavior. Most importantly, the fine-grained analysis of population history based on population genetics models is clearly a highly desirable means of identifying key regionwide attributes of human behavior such as small-scale migration.

CAN'T WE ALL JUST GET ALONG? IDENTIFYING CONFLICT AMONG SOCIAL GROUPS

Milner (Chapter 10) focuses on the human biological component of the mortuary record. He addresses the important question: How can contact be identified and measured among different social groups? One obvious approach to the study of contact is to consider conflict and warfare. This perspective serves as an important contrast to cooperative behavior, which, as Milner points out, has been somewhat overemphasized in the study of prestate societies.

Warfare in the context of social behavior is one type of interaction that has been addressed from various directions in archaeology, such as settlement location (e.g., Haas and Creamer 1993). However, the study of the participants themselves in conflict situations—their skeletal remains—offers an important vantage point that is not available from any other data source. Recent investigations of human remains by Milner, Willey, Owsley, and others attest to the significance of osteological assemblages in assessing levels and patterns of conflict in the past. Milner illustrates this point by examining the osteological signature of social conflict as it is represented in two late prehistoric mortuary death assemblages, the Norris Farms site in west-central Illinois and the Crow Creek site in South Dakota.

The Norris Farms site includes 264 individuals representing an accumulation of deaths over a short duration (by archaeological measures anyway) of perhaps several decades. The pattern of violence reveals key attributes of conflict. Sixteen percent of deaths in the series were due to violent encounters, and all but two (of 43) deaths were adults. The traumatic injuries (e.g., fractures, mutilation, decapitation, and scalping) indicate a level of violence not previously documented in North America. Milner argues that the deaths were accretional rather than catastrophic, which is a characteristic of chronic intergroup warfare that anthropologists have documented in contemporary small-scale societies (e.g., the Yanomamo).

Although it is difficult to explain the origins of conflict in this, or any other, archaeological setting, analysis of subsistence remains from the associated Norris Farms village indicates that the population may have experienced a reduced resource base. Almost certainly, the group was competing with some other population or populations in the region (see also Milner, Anderson, and Smith 1991).

The Crow Creek site includes the remains of some 500 individuals buried in a fortification ditch surrounding a village. In contradistinction to the Norris Farms assemblage, members of the Crow Creek population had been killed in a single massacre event. The degree of mutilation and death are extreme. Osteological analysis reveals that most bodies had been mutilated. Ninety percent of the crania, including those from women, and children, display cut marks from scalping. Moreover, decapitation was commonplace.

Like Norris Farms, the Crow Creek villagers had been the subject of attack well before their sudden demise; that is, a number of victims showed evidence of well-healed trauma from earlier violent encounters, including healed cranial depression fractures, scalping, and embedded projectile point wounds (see also Willey 1990; Willey and Emerson 1993).

Milner presents a solid case that violence in the Norris Farms and Crow Creek groups was not just isolated instances of conflict in the prehistoric Eastern Woodlands; rather, it represents part of a widespread pattern that has been underplayed by the archaeological community. Indeed, his review of the bio-

archaeological literature indicates that violence is well documented from the Archaic period through the late prehistoric and historic periods. Preliminary assessment of this literature indicates that conflict in most prehistoric situations is consistent with (although not as severe as) the hit-and-run violence at Norris Farms. This pattern includes some specific attributes: more adults than juveniles, involvement of both men and women (but a strong penchant for men), few individuals attacked at one time, use of ambush tactics, use of common weapons (e.g., arrows and spears), burial in community cemeteries, limited survival following attack, and mutilation following death.

Milner also provides the first systematic assessment of temporal patterns of violence in the Eastern Woodlands. He presents convincing evidence that violent encounters, although present in the entire archaeological record, increase during the last half of the first millennium A.D., especially among Late Woodland horticulturalists. Warfare continued to be an important social factor through the historic period.

What, then, are the causes of increase in violent conflict in late prehistory? Milner notes that the escalation of warfare in late prehistory occurs during a time of population growth, sedentism, increase in competition for restricted resources (e.g., high-yielding plants and productive land), and elaboration of complexity of sociopolitical structure. Additional archaeological indicators of increasing conflict include the use of palisades and other defensive constructions. Milner asserts that later prehistoric populations experienced increased tensions as resource competition escalated.

In summary, skeletons from archaeological sites reveal key information about hostile behavior in past societies, which arguably represents an important part of the social fabric of human behavior. Although incomplete, the record suggests that violence intensified in later prehistory owing to changing social, political, and economic circumstances.

CODA

The contributions to this volume make clear that mortuary studies offer a window onto patterns of human behavior that are less tractable through other lines of archaeological inquiry. The issues covered in this book are not just of interest to those of us who study dead bodies in archaeological settings, but rather, they represent concerns having a long history of study in archaeology and anthropology generally, such as individual, gender, ethnic, political, and social identity, conflict, resource control, labor appropriation and organization, ritual and meaning, social inequality, trade, population dynamics, and residence patterning.

Previous work in mortuary archaeology—although certainly not all—focused on single burials within the confines of individual archaeological sites. However, time and again, the contributors to the volume demonstrate that representation is potentially compromised by study of only part of a mortuary landscape. For example, although social collapse in Bronze Age England seemed to be indicated by a decrease in elaboration of mortuary behavior, Bradley shows that burial contexts previously underappreciated (rivers) played a key role in death-related rituals. Similarly, imagine what our understanding of the Copena Complex would be like without the broader consideration of material culture and population differences between its eastern and western ranges. The point is that we now have a stronger appreciation for variability within the Copena cultural sphere at the regional level. The research may (or may not) have identified the presence of eastern and western ethnic groups, but this concern is secondary to the new-found understanding of mortuary variability in this region of the southeastern United States.

This volume emphasizes, then, that although local factors are important, regional considerations are required in order to document variability, even within simple, small-scale societies. If the reader is able to draw one conclusion after their reading this book, it should be the following: Mortuary behavior can only be understood through the analysis of many facets of the death ritual and its accompanying archaeological signatures. This understanding can only be accomplished through a regional scope of analysis.

Prior to the modern era of mortuary archaeology beginning in the late 1960s, inquiry was largely confined to the examination of artifact accompaniments and body treatment. Human remains from archaeological sites were generally not considered by nonbiological anthropologists as essential for study. Typically, once human remains were excavated, they were shipped off to an osteologist for (usually superficial) study. The results of the study may or may not have been reported. If results did see the proverbial light of day, the report would likely as not have been buried as an appendix to a larger site report. This volume, its predecessors (especially Brown 1971; Chapman et al. 1981; and see also Blakely 1977; Boddington, Garland, and Janaway 1987; Powell, Bridges, and Mires 1991), and many other reports in the literature over the last couple of decades demonstrate that research based on the study of osteological remains from mortuary settings should be integrated into broader discussions of human behavior that draw upon many sources of information and diverse theoretical perspectives.

This point of adequate skeletal analysis is sharpened by O'Shea in his discussion (this volume) of Maros Group human remains. One can only imagine the increased breadth of study of eastern European Bronze Age mortuary behavior had the human remains from the Maros Group not been discarded in the 1930s and 1940s. Warfare was obviously an important part of the social interaction of

these Bronze Age populations. The biological signature of conflict in the context of social behavior in this region is now irretrievably lost.

Mortuary behavior is a highly sensitive indicator of belief systems and ideology. The powerful influence on ideology certainly played a key role in the determination of the inhumation practices discussed by the contributors to this volume. Although not addressed explicitly by the authors, it is a point of discussion that warrants treatment. In this regard, for example, like so many late prehistoric populations in the Eastern Woodlands of North America—especially in the Southeast—mortuary treatment involved placement in burial mounds or other complex formal disposal areas. Very rapidly, there was a shift in body treatment directly reflecting change in religious ideology and especially the introduction of Christianity to some regions (e.g., Florida and coastal Georgia) following the arrival of Europeans in the sixteenth century. For example, in the late prehistoric Irene site in north coastal Georgia, human remains were interred in mounds and other mortuary contexts with the bodies in flexed or semiflexed postures (Caldwell and McCann 1941). In sharp contrast, at the seventeenth-century Spanish mission Santa Catalina de Guale (St. Catherines Island, Georgia), deceased were interred beneath the floor of the church in supine, extended postures with the hands folded or clasped on the chest or abdomen (Larsen 1990). All other missions in Spanish Florida and other areas of New Spain followed a very similar mortuary program (Cohen, O'Connor, Danforth, Jacobi, and Armstrong 1994; Costello and Walker 1987; Larsen 1993). This pattern is virtually identical to contemporary mortuary practices in Spain and elsewhere in Europe. In high-status burials in some of the cemeteries in Spanish Florida, symbols of Christian ideology (crosses, rosaries, and so forth) were included with the deceased at the time of burial (Larsen 1990, 1993; Thomas 1987). The change in mortuary behavior from mounds to Christian cemeteries is virtually complete within a generation or two. That is, for all groups coming under the control of Spain in the sixteenth and seventeenth centuries, burial followed a template imposed by the introduction of Christianity. The change in mortuary pattern expresses sudden changes in norms of behavior and conformity to new ideology. Moreover, it shows that the fundamental structure of religious ideology changed in these native populations.

Other contact settings do not express this pattern of alteration in mortuary practices. For example, Jones (1992) has examined the impact of the Roman conquest on Britain in mortuary and funerary behavior. As a general pattern of "romanisation," he has observed changes in material culture and the public expression of religious observance (e.g., presence of monumental architecture). However, mortuary ritual and funerary behavior generally remained unchanged in native Britain with the Roman conquest, and continued to follow pre-Roman practices. Apparently, unlike Spanish Florida, the importation of new religious perspectives by the Romans did not significantly affect ideology of native populations except in a very superficial fashion.

I close by noting that the new developments mandating reburial of "culturally affiliated" human remains in the United States and elsewhere comes at a time when archaeologists and biological anthropologists are making unprecedented advances in knowledge about past societies. This volume affirms the progress of mortuary archaeology within the last decade, especially in regard to problem-oriented focus, theory, and method. We must continue to share this progress, both with the scientific community and the broader public, if we are to continue to build apace on these new-found strengths.

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